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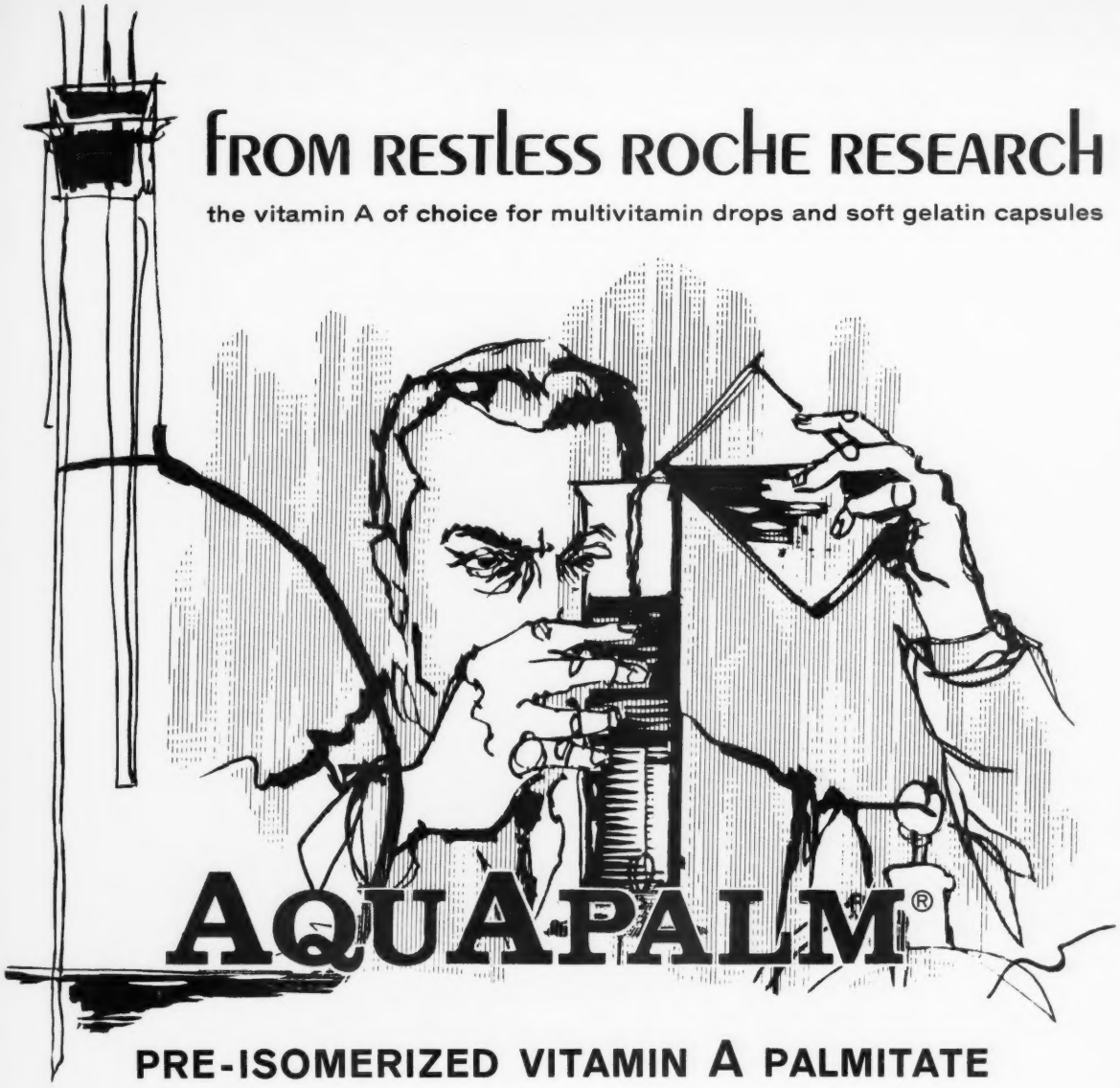

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Drug and Cosmetic Industry

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"You have one heck of a headache there, Mr. Browne."

Keeping Posted

Wyeth versus the Snakes

Wyeth Laboratories of Philadelphia provide a good example of the way in which pharmaceutical companies are continually performing an important public service.

During Hurricane Carla, thousands of deadly snakes, in the area from Port Arthur on the Louisiana border, to Galveston, Texas, came out of the swamps and the low grounds to invade the towns.

As the families returned to their homes, these poisonous snakes, in empty lots, on streets and in homes, meant a deadly menace.

To each of these returning families a kit containing a hypodermic, Antivenin serum and water to dilute it was given by Foster Bailey, divisional manager of Wyeth and his staff.

By September 19th, more than 1,500 kits had been distributed, and on a single day, nearly 500 of them were given to householders.

Most people who are poisoned by a rattlesnake will die if they do not have the serum. Young people are more susceptible. One of the serious problems is that once these snakes have gotten into a community or a home they will not leave. They have to be dug out and killed.

Stifling the Industry

Dr. Harry E. Carnes, of Parke, Davis & Company, had this to say at the American Academy of General Practice, Nebraska Chapter.

"Has the drug industry, which through its research achievements extended the life span of Americans by ten years, done so poorly for the people of the United States and the world as to merit attempts by segments of the government to stifle and ultimately control the pharmaceutical industry?"

Price Cutting

A new law in California, which went into effect September 15th, bars selling below cost, with intent to injure competition.

Since that date, California papers have reported the growing strife in retail competition, accompanied by epidemics of price cutting.

Two Sides To Every Story

In a rather unpleasant booklet, which goes to town against the drug industry in an unfair way, the AFL-CIO accuses the drug industry of "anti-social behavior inimical to the interests of the American people" in the pricing and promotion of brand name pharmaceutical products.

As an example of pure nastiness, the booklet states, "for the top companies, there's no business like drug business."

It is all very well to say that this is unfair, untrue, prejudiced and a lot of other things we do not like, but perhaps the real point to consider is just why the AFL-CIO feels this way.

The drug industry has a public relations program. A lot of money is spent and undoubtedly there is a lot of fruitful activity. It does not seem to us that the viewpoint of the drug industry is registering with the people and with political opinion in a way that carries real conviction.

It may be that the industry will have to employ one or more personal ambassadors to tell their very convincing story on the basis of personal relationship.

As far as we are concerned, the side of the coin that no one in politics seems to look at, is told best by the advertising of some leading pharmaceutical companies.

For instance, in a recent advertising spread, Lederle Laboratories informed the public of the company's airlift of small planes flying drugs to stricken areas, following Hurricane Diane in 1955.

Lederle service in an emergency is available on a round-the-clock basis. Packers, traffic experts, drivers, and even pilots, are alerted by a plan for answering distress calls.

When two catastrophic earthquakes virtually destroyed the city of Agadir in Morocco, rescue relief

bacteriostat

FOR SOAP, SHAMPOO, SHAVING CREAM & COSMETICS

bactericide

FOR HOUSEHOLD PRODUCTS

Vancide® BN

All formulators of household and toilet preparations should explore the addition of Vancide BN to their products. Vancide BN is Disodium 2,2′ Thiobis (4,6 dichlorophenoxide). It controls Gram positive and Gram negative bacteria and is unusually effective against fungi. Vancide BN is a fine crystalline powder, white in color, with a slight phenolic odor. Its use is indicated in a variety of products; for example, when added to floor wax, it makes the wax self-sanitizing. Bacteria count is constantly reduced, and residual action is effective as long as the wax is on the floor.

Write for literature and sample today.

R. T. VANDERBILT CO., SPECIALTIES DEPARTMENT
230 PARK AVENUE, NEW YORK 17, N. Y.

( ) Send Technical Data Sheet VBN-1J ( ) Send sample. Application.....

NAME _____ TITLE _____ P-14

(Please attach coupon to your letterhead)

teams and medical supplies were immediately mobilized all over the world. An emergency shipment of Lederle antibiotics and other medicines was sent aboard a special flight from New York. The shipment, valued at $12,000, was donated by Lederle.

In May, 1960, Lederle supplied Gas Gangrene Antitoxin to stricken Chile following the tragic series of earthquakes.

When a western United States family became desperately ill from botulinus poisoning, Lederle shipped 139 vials of Botulism Antitoxin by jet. The bill of $7,825 for the antitoxin was cancelled and Lederle paid the air freight costs.

Emergency help of this kind can almost be called routine for pharmaceutical manufacturers. We saw no mention of anything of this kind in the labor booklet and that is why we thought the booklet unfair, bitter and highly partisan. However, the pharmaceutical industry has yet to find a proper way to reach the public and influential groups with the positive side of the story.

Selling to Discount Houses

1962 will be a year of frustration and headache for manufacturers in general distribution. The biggest headache will be the discount house. As one leading manufacturer recently stated regarding the recognition of discount houses, "It's senseless to ignore this trade. You just don't issue an abrupt 'No' to retail people responsible for $5 billion in sales last year, and who are certain to do a far greater volume in 1961. Nor, for that matter, can you close your eyes to the retail giants entering the field."

The frustration of many manufacturers, particularly manufacturers of branded goods in general distribution, is wide spread and agonized. Many are bluntly refusing to sell their branded merchandise to discounters.

However, it is not as easy as it sounds. This became apparent at a recent luncheon of the National Association of Consumer Organizations, when new members of the Federal Trade Commission and the Justice Department's Anti-Trust Division were present.

The Justice Department representative stated that he would consider the closed-door merchants as small businesses, entitled by public to policy full safeguards against unfair competition. He added, in an apparent effort to be humorous, "We will defend to the death your right to experiment."

The newly elected NACO president stated, "We find manufacturers do not want to sell us the branded merchandise we need to meet consumer requests. These are various reasons for this. Sometimes, they don't like the color of our hair. Other times, they are reacting to pressure from other retailers who throw their weight around."

NACO is keeping a close watch on instances of refusal to sell. Recently a member filed charges in Federal district court against four wholesalers alleging anti-trust law violations based on a refusal to sell.

As the president of NACO stated, "Mere refusal to sell to the closed-door stores is not in itself actionable, but such a move dictated by pressure, or by a desire to curb competition, merits such retaliation."

A growing number of manufacturers are restlessly seeking ways to have their cake and eat it too. Many manufacturers, particularly in apparel, are setting up separate organizations to supply the discount house. As one of these manufacturers stated, "Our discount setup will be divorced entirely from the branded operation. We'll have a separate line of goods, separate packaging, separate brand name, separate salesmen, separate manufacturing facilities, separate shipping points, and separate sales offices, but we will use the creative brains of the parent organization in styling, financing, designing, merchandising, sales and production."

Other manufacturers are looking in the direction of mergers.

Explosive Terminology

Consider how the uneasiness of today is affecting the vocabulary of businessmen.

The Association of Chain Drug Stores will present a discussion call "An Explosion in Retailing," on October 10th, in New York.

Recently an article in the Journal of Commerce was headed "Explosive Growth Noted in Enzyme Research."

And, of course, all of our readers, we are sure, have heard about the world-wide menace of the "Population Explosion."

Increased Activity

Many administrative executives may consider issuing daily pills to their personnel as the result of some account research.

It has been found that a compound in the series alphabenzyltetrahydrofurfurylamine can stimulate substantially increased activity. It has increased the spontaneous activity of mice four times. Normally, in tests, mice interruped a light beam in their cage 250 times in a 30-minute period. When given minute doses of this compound, activity was increased to more than 1,000 interruptions over the same period.

Cosmetics Fail in Food Stores

An attempt to trade up in cosmetics has been abandoned by one of the leading food stores in the southwest. Although cosmetics were displayed near the check stands and in sight of store personnel, pocketing was an uncontrollable problem. Adding to the stores' discouragement over pilferage was the fact that this higher priced line moved considerably slower than their space warranted.

A New Word

Isn't it interesting how many new, vivid words have been added to the English language by all the things that have been taking place in retailing and

distribution.

"Twig" is one of the newest of these words. "Twig" is the branch of a branch store.

We understand that J. L. Hudson of Detroit, a leader in branch store building, now plans to bring to the city, small shops offering limited lines but quick shopping conveniences.

Statistics

According to a release from the Census Bureau, there are 51,448 drug stores in the continental United States.

Of these, 47,032 drug stores have a payroll.

84.9 per cent of sales are done by 37,196 drug stores employing 77,281 pharmacists.

Increased Advertising

One hundred leading advertisers, including fifteen drug and cosmetic companies, increased their advertising expenditures five per cent in 1960 to a total of $2.6 billion, according to Advertising Age.

The biggest advertiser among drug and cosmetic companies was American Home Products with an expenditure of $65 million (representing 14.6 per cent of sales), up from $62,000,000 spent in 1959. American Home Products ranked among the top ten advertisers for the first time, replacing Colgate-Palmolive Company in seventh place. Colgate dropped to eighth place, cutting back 16 per cent to $59,000,000.

The second biggest advertiser in this industry was Bristol-Myers Company with an expenditure of $40,000,000 (27.3 per cent of sales), up from $38,000,000 in 1959. Warner-Lambert Pharmaceutical Company ranked third with an expenditure of $31,500,000 (22.0 per cent of sales), up from $31,000,000 in 1959.

Among the other leading advertisers were Sterling Drug, $28,200,000 (18.8 per cent of sales), up from $27,500,000; Revlon, $24,000,000 (17.6 per cent of sales), up from $22,000,000; Miles Labs., $23,500,000 (28.5 per cent of sales), up from $21,500,000; Johnson & Johnson, $17,000,000 (5.5 per cent of sales), up from $15,000,000; Carter Products, $16,000,000 (28.2 per cent of sales), up from $15,000,000.

Patent Rights

The patent rights of any American may be embedded in the Constitution and may have been considered by our Constitution-writing forefathers as one of the basic rights of the American citizen. Nevertheless, these rights are being jeopardized in ways that these forefathers were not able to foresee.

We are not speaking here of the new attitude developing in Washington in regard to the patent protection, which is a constitutional right to every American individual and corporation. We are referring to a reported statement of the administration's patent commissioner stating that there is a crisis in administrating the department and "If a solution isn't found, the patent system in its present form may have to be abandoned for something else."

It now takes three and one-half years following application before a patent can be granted. To a certain extent the words "patent pending" afford a protection, but experience shows that these words very often completely fail to scare off the imitators, particularly in the case of smaller companies.

In addition, experience shows that of the small number of United States patents challenged in the courts, an estimated 60 per cent are declared invalid either because of a Patent Office oversight or for some other reason.

In 1955 the Patent Office established a plan to reduce the three and one-half year average time needed to issue a patent and to cut the backlog of 221,900 applications down to about 100,000 by 1965.

This plan has not worked out very well. It still takes three and one-half years to get a patent, and the backlog applications are now about 200,000.

New American Chemical Society Publications

Establishment of *Bio-Chemistry*, a bimonthly publication of the American Chemical Society, is announced by Dr. Alden H. Emery, executive secretary of the Society. The first issue will appear in January 1962.

Professor Hans Neurath, executive officer of the biochemistry department at the University of Washington's School of Medicine, has been appointed editor.

The board of directors of the Society authorized the new journal in recognition of the continually expanding scope and depth of biological chemistry. The Society's sponsorship of *Bio-Chemistry* is in line with the ACS tradition of providing adeqaute publication outlets for significant research in all fields of chemistry.

The purpose of *Bio-Chemistry* is to publish the results of important original research in all areas of fundamental biochemistry, especially investigations which yield new ideas and open new experimental roads. The journal will emphasize the relationship of chmeistry to biochemistry, and of biochemistry to the other biological sciences.

On the request of its Division of Medicinal Chemistry, the American Chemical Society has decided to publish a *Journal of Medicinal and Pharmaceutical Chemistry* under its own sponsorship. Interscience Publishers, New York, has agreed to transfer ownership of their *Journal of Medicinal and Pharmaceutical Chemistry*, published since 1959, and to discontinue publication after January 1, 1962. The American Chemical Society will start publication of the Journal on that date as a continuation of the Interscience Journal with Volume V. The *Journal of Medicinal and Pharmaceutical Chemistry* will remain under the editorship of Dr. Alfred Burger who was one of the initiators and the editor of the old Journal.

THE ETHICAL DRUG HIT PARADE

BY MILTON MOSKOWITZ

Hundreds of products are marketed by pharmaceutical companies but a handful pull down a substantial portion of total sales. It is quite possible for a manufacturer to make a respectable profit on a product selling less than $1,000,000 a year. However, the explosive growth of the pharmaceutical industry since the end of World War II has come from the development of new therapeutic agents which have found such wide use in medical practice that they individually command sales levels in excess of $5,000,000 and $10,000,000 annually. These are the products which show up again and again on prescription pads. They are heavily promoted to doctors by their makers. Once established at this high repeat level, they return a handsome profit to their manufacturers.

Which are the new products now enjoying this healthy volume? Well, there are currently about a dozen ethical drugs believed to do more than $10,000,000 a year, in manufacturer's prices. They are the following:

Chloromycetin—Parke, Davis antibiotic
Equanil—Wyeth Laboratories tranquilizer
Orinase—Upjohn antidiabetic
Declomycin—Lederle Laboratories antibiotic
Achromycin V—Lederle antibiotic
Diuril—Merck Sharp & Dohme diuretic
Ilosone—Eli Lilly antibiotic
Panalba—Upjohn antibiotic
Compazine—Smith Kline & French tranquilizer
Dexamyl—Smith Kline & French anti-obesity drug
Librium—Roche Laboratories tranquilizer
Peritrate—Warner-Chilcott cardiovascular agent

In addition to these 12 brands, there are several others which are on the rim of $10,000,000. These are products doing volume in the neighborhood of $8,000,000 or $9,000,000 a year. In this category are Gantrisin, Roche's sulfa; Darvon, Lilly's non-narcotic pain-reliever; Merck's Hydro-Diuril and two leading cortico-steroids, Upjohn's Medrol and Merck's Decadron.

Any compilation of top ethical drug sellers should also include Burroughs-Wellcome's Empirin compound, which in its various forms does well over $5,000,000 a year. The Empirin brand name is the perennial leader on the prescription hit parade—that is, it probably shows up more on prescriptions than any other brand. Industry sources report that some 8,000,000 prescriptions were written for Empirin last year. This total is far in excess of the number written for any other brand. The nearest may have been

Gantrisin, which chalked up some 6,000,000 prescriptions.

Looking over these top sellers, one can discern some interesting trends. For one thing, it is obvious that antibiotics continue to hold down the top rung in the multi-million-dollar derby. Of the top 12 products, five are antibiotics. Also, the antibiotics tend to have super-volumes. For example, Parke, Davis & Company has conceded that it did $80,000,000 of its 1960 volume of $200,000,000 in Chloromycetin. P-D is, of course, a full-line house, offering virtually every type of drug. But here is one product accounting for 40 per cent of its sales—and probably a higher proportion of profits. About half of Chloromycetin sales came from markets outside the United States.

With two antibiotics in the top ten circle, Lederle is still the major factor in this market. Only Declomycin has now become Lederle's leading antibiotic brand. It passed Achromycin V last year and is now lengthening its lead over the older version. Declomycin is now estimated to produce some $25,000,000 of revenue for Lederle. Achromycin V may now have dropped below the $20,000,000 mark. Incidentally, Lederle still does a highly potent volume of about $5,000,000 in two older antibiotics—Achromycin and Aureomycin. It is clear anyway that these few antibiotics account for the lion's share of Lederle's business.

Tranquilizers remain another strong highvolume area for the industry. Of the top 12 sellers, three are tranquilizers. The No. 1 brand in 1960, as it has been for some five years, was Wyeth's Equanil, which did more than $20,000,000, down sharply from the plus-$30,000,000 it did in 1959. The major reason for its falloff was the entry of Roche's Librium into the market in the spring of 1960. Librium picked up sales month-by-month, eating into the markets held by all other tranquilizers. It quickly became the No. 1 tranquilizer in terms of new prescriptions written although its total sales for the year were still less than half of Equanil's. The 1961 figures are expected to show further gains for Librium. Of all the tranquilizers, SKF's Compazine probably held up better than any against the impact of Librium. One interesting facet of this market: Wyeth does in Equanil three to four times the volume Wallace Laboratories does in the identical drug, Miltown. However, Wallace, as the developer of meprobamate, is naturally getting a royalty from Wyeth on all Equanil sales.

Aside from Chloromycetin, Declomycin and Equanil, only one other product is believed to have a total United States volume in excess of $20,000,000. And that is Orinase, Upjohn's antidiabetic, which probably does business in the neighborhood of $24,000,-000.

One interesting analysis is the number of top-selling products marketed by different companies. The volume leaders in the ethical drug business are Parke, Davis and Eli Lilly. However, P-D places only one product among the top 15. And Lilly has only one among the first 12. Upjohn does quite well, what with Orinase, Panalba and Medrol. Not too many years ago Merck would not have figured at all in this kind of a breakdown; today it is represented strongly with its 3-D combine—Diuril, Hydro-Diuril and Decadron. Smith Kline & French Laboratories has two in the winner's circle—Compazine and Dexamyl. Another fast climber is Roche, doing spectacularly with Librium and Gantrisin. Among the notable absentees from this top-seller category are Abbott Laboratories, E. R. Squibb and Chas. Pfizer—each of them high-volume producers.

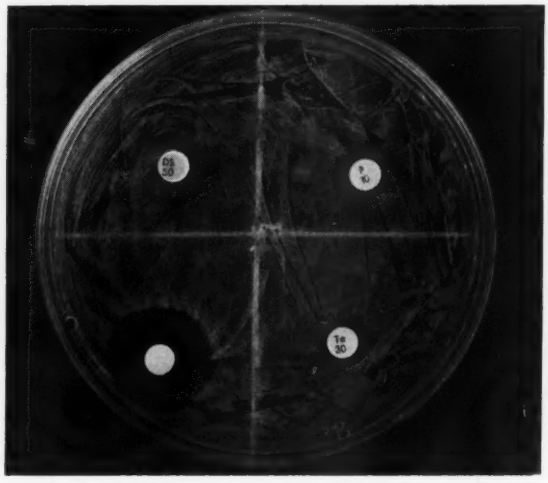
This analysis tends to bear out the industry's claim that unlike the steel or automobile industries, the pharmaceutical market is not dominated by two or three big producers. The top 12 companies in the industry probably account for two-thirds of total sales but there is no one company which enjoys more than ten per cent of the total market. On the other hand, it is probably fair to say that particular market segments are dominated by a handful of producers. Thus, in the antibiotic market, Lederle and Parke, Davis carve out a big chunk of the business between them. And in the tranquilizer market, Wyeth, Wallace and Smith Kline & French have taken the cream of this business.

Having a top seller this year does not, of course, guarantee that you will have one next year. Ten years ago Pfizer had a husky share of the antibiotic market with Terramycin. By 1959, Terramycin's market share had dwindled to about two per cent and Pfizer has not been able to come up with a tetracycline which has achieved any significant share of the total business. The shifting tides of fortune are graphically illustrated in the cortico-steroid market, where half a dozen companies have jockeyed fiercely for position. In 1950, Merck Sharp & Dohme had 100 per cent of the business with Cortone. Unbranded cortisone then began to come into the market and by 1952 Cortone's market share had slipped to 80 per cent. Two years later Cortone dropped to 25 per cent of the market but Merck had carved out another 25 per cent with Hydrocortone; meanwhile, Upjohn had snared 15 per cent of the business with Cortef and unbranded cortisone had moved up to 25 per cent of the business. Then came a big breakthrough—Schering's development of Meticorten. With this new agent, Schering took over 54 per cent of the market by 1956—plus another six per cent in Meticortelone. Pfizer had bitten off 8 per cent with Sterane and Pfizer held six per cent with Delta-Cortef. What happened to Merck, which had, at first, owned this market? Its share of the market had dipped to less than five per cent and two years later—in 1958—it had virtually evaporated. The big sellers in 1958 were Schering's Meticorten, Upjohn's Medrol and Lederle's Aristocort, each with about 25 per cent of the market; Squibb had also come in with Kenacort to capture another ten per cent. Since that time Merck

(*Continued on page 662*)

SOCIETY OF COSMETIC CHEMISTS MEET

BY CHARLOTTE HAAS ASSOCIATE EDITOR, SOAP AND CHEMICAL SPECIALTIES



"How far should cosmetics move toward being drugs" was one of the questions raised by Dr. E. G. Klarmann in a paper presented at the eighth annual seminar of the Society of Cosmetic Chemists. Actually this thought might well have been the title of the entire two-day seminar which was held September 26th and 27th at the Barbizon Plaza Hotel, New York City. Official theme of the program was "Biological Activity in Cosmetics." Thirteen papers were presented by representatives of the medical profession, industry, and academic institutions.

Dr. Norman Orentreich of the New York University School of Medicine spoke on "Anti-Inflammatories." History and chemistry of anti-inflammatory agents for topical use on the human skin were reviewed. Methods for the evaluation of efficacy of such agents were discussed by Dr. Orentreich. Safety aspects of topical anti-inflammatories were presented and the dissociation of topical and systemic anti-inflammatory action were discussed by the speaker.

Utility, efficiency and safety are the three touchstones for the evaluation of personal products, according to D. S. Barrie of Procter & Gamble Company. Speaking on 'The Use of Fluorides in Anti-cariegenic Dentifrices," he proceeded to apply these criteria to a toothpaste containing stannous fluoride. He discussed the value and limitations of water fluoridation and of topical fluoride application. An effective fluoride dentrifrice fills a definite need, according to Mr. Barrie, both as a means of extending fluoride protection to those not reached by other means of protection, and also as a supplement to these other procedures.

Early screening and development work which indicated stannous fluoride to be the compound of choice for incorporation in a fluoride toothpaste was recalled by Mr. Barrie. The extensive clinical testing which confirmed and corroborated these indications was briefly outlined.

Pointing to the paramount importance of safety, Mr. Barrie discussed some aspects of the manufacturer's moral and legal responsibilities toward the public. A personal product must be safe under conditions of normal use, slight abuse, and extreme abuse, he said. Some phases of the safety tests applicable to a fluoride toothpaste were treated.

"Should Sunscreens be Incorporated into Cosmetics" Dr. John M. Knox of the Baylor University College of Medicine asked. He answered the question with a most emphatic "Yes." Chronic exposure to sunlight is the arch enemy of the human skin, according to this speaker. Apparently, skin changes usually interpreted as aging are due largely—if not entirely—to sunlight. Dr. Knox showed slides to illustrate the comparatively youthful skin of middle-aged and elderly negroes, the aged facial skin of fair white individuals and the ravaged facial skin of albinos.

He also demonstrated the damaged skin of face and neck in patients whose body skin showed no signs of "aging" or of damage by exposure to ultraviolet radiation. High rate of skin cancer incidence in fair skinned individuals exposed to chronic and intensive sunlight should serve as a warning, Dr. Knox said.

Clothing and ultraviolet absorbers to protect the exposed skin could provide appropriate protection against the ravages of ultraviolet radiation. However, to date no truly satisfactory sunscreen is commercially available, according to Dr. Knox, who called upon the cosmetic industry to develop such protective agents and incorporate them into routinely used cosmetics such as face powders and skin creams.

Reporting on some of the clinical tests with various commercial products, Dr. Knox pointed out that even the best of these are effective no longer than a few minutes. Para-aminobenzoic acid, benzopheneone derivatives, and acrylonitrles were found most effective screening agents in tests conducted at Baylor.

In the discussion following Dr. Knox's paper, Dr. Klarmann pointed out that the public would have to be completely re-educated if the cosmetic formulator were to change his products to conform with Dr. Knox's advice. The customer had been taught to look for "Tan without burn" whereas, according to Dr. Knox, he should look for "no tan," a very different matter.

Keratinase and its potential applications in cosmetic preparations were discussed in a paper on "Enzymes" presented by K. L. Howard of Wallerstein Laboratories. Dr. Howard briefly dealt with some of the topical applications of various enzymes in medicine and their potential applications in cosmetics.

Skin roughness is one of the conditions which might be overcome by topical preparations incorporating keratina and other enzymes, the speaker indicated. Some methods of evaluation of enzymes in cosmetics were suggested.

Dr. John Strauss of the Boston University School of Medicine spoke on "Effects of Estrogens on Sebaceous Glands." Various methods used in the past for measuring the sebaceous flow or output were recalled by Dr. Strauss. He then reported on a novel technique which involves the direct quantitative gravimetric measurement of surface lipids trapped on ether cleaned cigarette papers.

In the author's experience, this technique has proven to be highly reproducible for evaluating any changes in sebum production. The effect of estrogens, administered systemically and topically to adult subjects, has been evaluated by this method as well as by biopsies. The gravimetric method has been found to be much more sensitive in respect to detecting the suppressant effect of estrogens, Dr. Strauss said. Sebaceous secretion is readily depressed with oral administration of doses in excess of 0.25 mg. of ethynyl estradiol daily. Obvious undesirable systemic effects are produced by dosages of this order; therefore, systemic estrogen therapy is impractical for the inhibition of sebaceous secretion, according to the speaker.

In a further series of experiments involving the topical administration of estrogen and the combined administration of estrogens and androgens systemically, it has been proven that estrogens do not inhibit sebaceous gland activity by a direct action of the glands, Dr. Strauss reported.

"Pregnenolone Acetate—A Dermatologically Active Steroid" was the title of a presentation by Dr. John Silson of Revlon, Inc. Pregnenolone is known to be free from progestational and other systemic hormonal activity, Dr. Silson pointed out. Extensive clinical trials in the treatment of arthritis and related conditions have demonstrated no systemic activity or toxicity on oral or parenteral administration, Dr. Silson reported.

However, on application to the skin, pregnenolone has been shown to have local effects similar to the estrogenic hormones. Such application resulted in epithelial plumping without any of the systemic gonadal effects which limit the use of estrogens.

Effectiveness and safety of topical application of pregnenolone have been conclusively established in repeated animal and clinical trials, Dr. Silson reported.

Ample evidence is available bearing on the utility and safety of fat-soluble vitamins A, D, and E, according to S. H. Rubin of Hoffman-LaRoche, Inc., who presented a paper entitled "Vitamins." Some of this evidence was reviewed by Dr. Rubin in connection with the topical use of these vitamins in the treatment of numerous skin disorders and in cosmetic formulations.

Among the water soluble vitamins, panthenol, a member of the vitamin B complex, is commonly used in topical therapeutic and cosmetic preparations, Dr. Rubin reported. He presented evidence of panthenol's effectiveness and of its safety by oral, parenteral, percutaneous and inhalation routes.

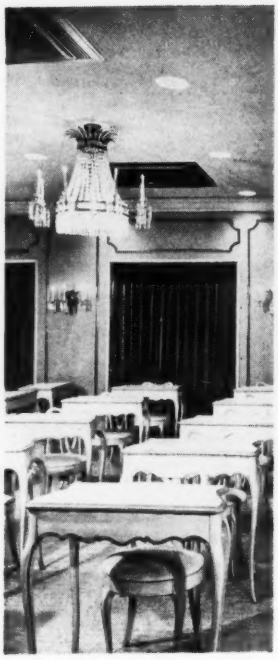
The conversion of panthenol to pantothenic acid and its relation to coenzyme A were discussed.

Recent data demonstrating efficacy of other vitamins by topical application were reviewed. Of particular interest is the role of vitamin B_6 in the prevention of dental caries, which appears to be more of a local than a systemic action.

Incorporation of anticholinergics into antiperspirants appeared to be one of the most promising fields for pharmacologically active agents in proprietary skin care products, according to J. F. Migliarese of the Colgate-Palmolive Company. However, this promise remains unfortunately unrealized up to the present, Dr. Migliarese said.

Percutaneous absorption, side effects, tolerance,

(*Continued on page 665*)



A NEW STEP IN COSMETIC EDUCATION

An entire floor of the Helena Rubinstein New York Salon has been devoted to a "Little Theatre", where women may learn how to make themselves beautiful through demonstrations, lectures and practical courses.

It is the firm conviction of many people in the cosmetic industry that the demonstration system, long established in retail stores, is the chief bulwark of industry security as well as the primary driving force for sales expansion.

There are at least 14,000 full-time sales demonstrators in approximately 6,000 stores. They are essentially on the payroll of cosmetic manufacturers, either on full time or on a share basis with other manufacturers. In the independent drug stores, full-time demonstration has increased, the girls are paid mostly by the store, but are liberally helped by the product manufacturers.

Because of the importance of demonstration and education in the cosmetic industry, much interest is being stimulated by the dedication of the Helena Rubinstein "Little Theatre." According to the instructions of the architect and interior decorator, the "Little Theatre" and the instruction rooms which take up the entire sixth floor of the Helena Rubinstein establishment on Fifth Avenue and 52nd Street in New York City, must be beautiful and beautifully integrated, luxurious but workable. The "Little Theatre" area can be divided into instruction rooms or expanded to take in the entire length of the floor accommodating in excess of 150 people.

A tight interlocking schedule will keep the "Theatre" and instruction rooms active a minimum of eight hours a day. Additional events are scheduled for career women in their after-work hours and on Saturdays. Also, special noon-time lectures or demonstrations for working girls with provisions for low-cost, low-calorie luncheons are scheduled.

Condensed courses, lectures and demonstrations will be scheduled for convention groups, tourists and out-of-town business women with limited time.

Madame Rubinstein is one of the real pioneers in cosmetic education in this country. In 1902, the young Polish-born woman, while visiting relatives in Australia, found herself besieged with requests for advice from friends on how to acquire a complexion like hers. She soon went into business for herself and within a year had a mass $100,000 in capital. She then returned to Europe and opened her first salon in London. Today there are Rubinstein plants in the United States, Switzerland, Germany, Italy, Canada, Australia, Brazil, Argentina, Africa and Israel, and the company is still in a period of expansion. •

PROBLEMS IN MASKING MODERN PHARMACEUTICALS

BY FRED WESLEY
FLAVOR DIVISION FRITZSCHE BROTHERS, INC.

Pharmacists in product development are pressured by demands that medicines be made tasteful, despite the inherent obnoxiousness of the modern pharmaceuticals that make up those very medicines.

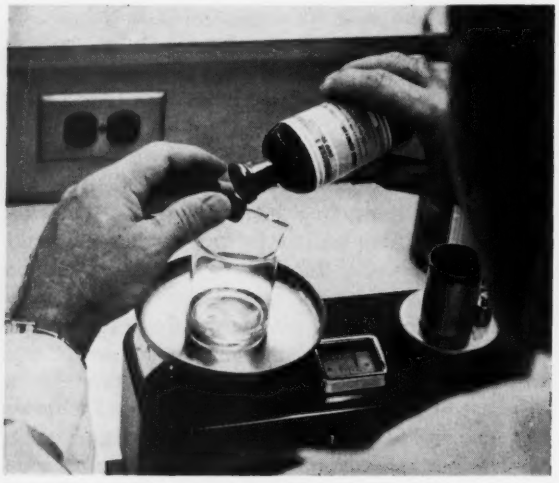
This dilemma has remained unresolved, mainly because pharmacy has neglected to examine its causes. To bring it closer to eventual liquidation, a study was undertaken, which showed the existence of technical, procedural, physiological, psychological, economical educational, and organizational problems. Their analysis will help in their solution, with a resulting advance of the knowledge of how to mask modern pharmaceuticals.

For the most part, this study deals with flavor, since it is the prime taste-masking tool in the hands of the product formulator. Rather than laboratory problems, it stresses those of a more general nature. They are the ones least publicized, yet most often responsible for the difficulties in achieving organoleptic acceptance.

Technical Problems

The aim of all pharmaceutical flavor work is to give medicine agreeable taste and odor. This may merely cover the obnoxious taste or, additionally, it may impart a distinctive flavor. Formulators often fail to state the point up to which they want experimentation to be carried. They must be mindful of flavor's basic objective: to make the patient take, retain, and retake his medicine. Flavorists, therefore, should never be asked to achieve the deliciousness of a confection.

While compatibility, and stability of a flavoring are prerequisites, generally known, one seldom noted requirement is strength. The lack of it eliminates many basically sound flavors, simply because the



In developing a flavor to mask the disagreeable taste of a pharmaceutical, drops of flavor, precision weighed, are added to the medicine. The purpose is to make the patient take his medicine, retain it and retake it.

The compatibility, stability and strength of various flavorings are important considerations. For compounding the final flavor, ingredients are lined up in the order of addition called for by the formula.

Presented to the Convention of The American Pharmaceutical Association, April 1961, Chicago, Illinois

This flavor laboratory is the focal point of Fritzsche research on masking pharmaceutical taste. The array of bottles represents thousands of flavoring specialties custom blended for specific purposes.

level required is too high to be incorporated into the medicine.

Product developers generally recognize the need for esthetic harmony in flavor choice. They would reject fish flavor in antacide or garlic in antiemetics. The same rules apply in choosing color. Thus, the lemon-flavored product should never be colored red, nor should cherry flavor be identified with yellow.

A constant offender to palatability is the vehicle; unless properly formulated, it can introduce a taste much worse than that of the medicine itself. Exclude propylene glycol, as well as bitter suspending and emulsifying agents. Have enough alcohol present to solubilize the flavor. Utilize the advantage of improved tactile sensation through the use of sorbitol. Above all, exercise as much care in designing the vehicle as in carrying out clinical investigation. Dosage levels, preservatives and artificial sweeteners must undergo study for influence upon taste.

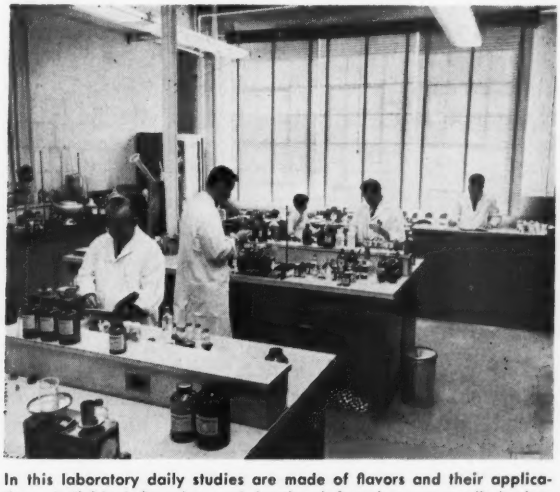
The problem of complexity of medicine and flavor can be solved by applying such techniques as individual flavoring and fractional flavoring; if more than one active ingredient is present, flavor each individually. Then combine the individual flavors into your final master flavor. If you have the know-how, work with basic flavor constituents. Then combine the individual constituents (fractions) into your final flavoring compound.

Procedural Problems

Often synchronisation of flavor development and product development is lacking. The product is developed and on completion flavor is added. This creates the problem of finding flavor for a product so inflexible in its makeup, that formula changes,

(*Continued on page 636*)

A chemist totals the ingredients to insure correctness in compounding as the suspension is agitated in a blendor. Unless the vehicle is properly formulated it introduces a taste much worse than the medicine.



In this laboratory daily studies are made of flavors and their applications. Individual flavoring and fractional flavoring are applied when more than one pharmaceutical ingredient presents a flavor problem.

Ceylon plant, one of Pfizer's 25 international plants on five continents.

OVERSEAS PHARMACEUTICAL PACKAGING OPERATIONS

BY R. R. UMBDENSTOCK MANAGER OF PHARMACEUTICAL PRODUCTS, PFIZER INTERNATIONAL, INC.

Reprinted from complete paper presented at the 23rd Annual National Packaging Forum of the Packaging Institute, Inc.

Pfizer seriously entered the international field in early 1951, when we established our first pharmaceutical production and packaging unit in Brussels. This plant is now undergoing its second major expansion and is a source of numerous pharmaceutical specialties in all pharmaceutical dosage forms. From this beginning has come an international chain of more than 25 such plants spread over the five continents, and I am convinced that more are to come.

When we started with Brussels, we had a plant laid out by Americans which was entirely American in its machinery and yielded to the local practices only in its electrical and piping installations (and we were unhappy with having to make even this slight concession). Today we have a plant going up in the Far East in which we are installing an ointment mixer from Holland, a tube filler from Italy, an ampule filling machine from England, and a foil stripping machine from Germany. The reasons for this are various, but one prime consideration leads us to purchase foreign-manufactured equipment: the limitations placed by countries in which we operate on the amount of United States dollars we may spend outside the country in question. Thus, we are obliged to purchase from countries whose currency we have available in our overseas operations areas.

Now as to actual foreign equipment—though there is much that is not worth the effort to dump it into the sea, there is at least one, and more often there are several, worthwhile packaging machines capable of performing any operation you care to mention. When I say "worthwhile" I mean equal to a similar American unit. They may have to yield to us sometimes on maximum capacity or on versatility in the handling of a variety of package sizes, but let us remember that these machines are scaled to local conditions. Remember also that they are making rapid strides in correcting these deficiencies.

Sources of good equipment are spread around the globe, but understandably are most numerous in Europe, Japan and Australia. At one time much of this equipment was based either on ideas pirated from the United States or on information provided through licensing arrangements. Today, however,

they are doing much original thinking and are coming up with some interesting developments—particularly in Germany and Italy.

As I visited various equipment manufacturers and exhibitions over the past ten or 11 years, I have noticed a decided change in equipment available. Where 11 years ago there was very little evidence of integrated packaging lines, today they are almost as frequently in evidence as they are in the United States. More remarkably, the units of these integrated lines are often built by the same company, with the various units specifically designed to be linked one to the other. On the other hand, we also see evidence of two companies, specialized in different fields, working together and designing their respective units with the other company in mind. They will even exhibit in adjacent booths, linking their equipment together. These integrated lines are not a conglomeration of available units modified and adapted to form a more or less satisfactory line. There is also a noticeable tendency to build combination units; such as a unit capable of performing several operations with the component parts mounted onto a single base and run by a common drive.

Why, aside from dollar exchange limitations, do we buy foreign-made equipment? We try to buy the machine best suited to our needs—that is, one which has actual operating capacity in the range of our requirements, one which is rugged so that it will stand up under the somewhat less than optimum maintenance which experience has shown it will get during its useful lifetime, one that is easy to operate while still yielding a product meeting our specifications, and one that is available at reasonable cost. Many foreign-made machines meet these requirements. In addition, many foreign companies have much more extensive representation outside their own country than do American companies, and generally these representatives are prepared to supply prompt service.

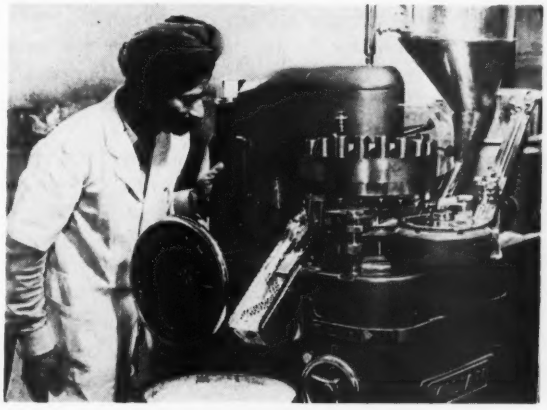
There are also certain disadvantages. Probably the two most important are the difficulty in communicating with the supplier (due to language differences), particularly when modifications are required, and less regard for safety features than we usually build into our own units. A third point is that deliveries are usually much more drawn out than with United States suppliers.

I would like to describe specific items of equipment available in various countries. Although we have some of these installed in our own factories and hence speak from firsthand experience, I will also mention others which are either so new or outside the scope of our own operations that what I say about them is based on impressions only.

To illustrate the point made previously about the tendency towards integrated lines, a bottle washer produced by a firm in West Berlin was specifically designed to be coupled to a sterilizing oven built by a firm in Stuttgart, who then uses the output of the sterilizer to feed directly their own combination sterile powder filler (auger type), automatic stoppering machine and automatic sealer. In such a unit, which has a capacity of 60 to 120 bottles per minute, a bottle is never touched by the operator between the time it is fed to the washer and the time it is fully sealed.

There are minor problems to such a machine, such as the fact that there is no reserve of sterilized bottles and hence filling operations must be delayed until freshly sterilized bottles come from the washing-sterilizing combination.

Another company in Karlsruhe, Germany which specializes in labeling and cartoning machines has built an entire line for handling of ointments. An operator feeds lithographed tubes to a very fine ointment-filling and tube-closing machine which automatically drops the filled and closed tube into the conveyor pockets of a cartoning machine which completes the job. This company builds a full line of cartoning equipment and so is prepared to imprint the carton with lot numbers and expiration dates and insert leaflets, and the likes. This unit is presently useable only on high-volume production because of rather lengthy changeover time.



Capping bottles (above) and tablet-making (below) in the Indian plant.

Another very new unit with interesting possibilities for large-volume runs is a combination ampule

Filling capsules at Pfizer's production and packaging unit in Mexico.

washing, sterilizing, filling and sealing machine which has just been built by a firm in Cologne for a Swiss pharmaceutical manufacturer. This unit is designed to handle ampules varying in size from one to 20 cc. It selects 12 ampules from the in-feed hopper, transports them as a group through the washing stage, sterilizes them by means of an ultra-short high temperature air blast, fills them with the conventional filling unit, pull seals them and then discharges them to the out-feed hopper from which they are transferred by hand to a leak test unit.

I have not seen data substantiating their ability to sterilize the ampules with the cycle they are using, but knowing the company for whom they built this unit, I am sure this feature was extensively tested before an order was placed for a machine costing $75,000.

I saw this unit at Achema in June of this year, prior to its delivery to the purchaser. It was being run on an intermittent basis so that proper adjustment of gas flame, and so forth was not possible, but it was still turning out a very nice product.

One unit which is of immediate interest to me is a relatively new powder and granule drier which appears to have the conventional tray drier beat by a mile. This type of unit is available from two suppliers in Europe.

This machine in the drug firm's Argentina plant seals sterile bottles.

In this unit an inverted truncated cone with a fine stainless steel screen bottom is used to hold the product to be dried. This cone is wheeled into the drier and so positioned that the top edge is sealed to a stocking type dust collector. A stream of tempered air is caused to flow through the moist product, gently agitating it and removing the water or organic solvent contained. The volume of air is adjustable so that the product is gently agitated to insure uniform drying, but not so vigorously agitated as to carry the load up into the stocking dust collector.

Using conventional drying temperatures, these units will dry a load to one per cent or less residual moisture in one hour or less. This means that not only do they have a good capacity, but accomplish the job with greatly reduced exposure of the product to the possible detrimental effects of prolonged temperature and contact with air.

This unit is available in a wide range of sizes, from a small bench model for development laboratory use up to a large double effect unit designed to effect economies in heat and time.

Concerning the general line of ampule handling equipment, there are many fine machines available in England, Germany and Italy from which to make your selection.

Ampule washing machines range all the way from small hand-loaded units to a semiautomatic line made in Germany. This line first takes a full carton of ampules as delivered by the manufacturer and transfers them to racks which are then manually transferred to the washing machine which goes through its washing cycle automatically. The racks of washed ampules are then placed in a third unit which transfers the ampules to the trays in which they are sterilized and from which they are fed to the filling machine.

Ampule fillers cover the range from small semiautomatic units which are hand fed up to automatic units which handle one, two or three ampules at a time. All the units which I have purchased are equipped for both pre- and post-flushing with an inert gas, and for pull seals, but can be obtained for tip sealing if you prefer. We have never failed to exceed manufacturer's maximum rated speed on any of the units we have purchased, in spite of the fact that the only product we handle in ampules is a very sticky one, spillage of which gums up the mechanism in short order.

One item of ampule marking equipment which I like very much is an English machine (in use at our vaccine unit in England) for ceramic printing. Just after our English plant had purchased this machine, I spoke about it with friends in two American companies who told me that their experience with it had been disastrous because of excessive breakage during the firing operation, which is done by direct contact with gas flames. I don't know whose ampules they

(*Continued on page 635*)

THE pH OF THE SKIN

BY GAVERN T. WALKER

Of much interest to the cosmetic chemist is the *p*H of the surface of the skin, and there has been a great deal of work carried out, during the last decade, on this very question. The surface of skin comprises, of course, a film of aqueous solution, and this film is dependent, in its nature, upon many factors, for example, the various secretions of the skin glands, and the keratin lying below the surface.

The *p*H of the skin surface varies very much from one individual to another, and even from one part of the skin to another. There are grounds for believing, also, that the *p*H is influenced by such factors as age, sex, season, and so forth, although there is not yet available conclusive data relating to this.

Of the greatest importance in any study of the *p*H of skin surface is the method of actual measurement of the *p*H. Very serious errors can result in measurements involving indicators, and, because of this, some of the earlier reported values must be suspect. The only reliable means of determining skin surface *p*H is by the use of a *p*H meter and calomel electrodes, the procedure utilized by Blank[1] and by Draize.[2]

Blank made careful measurements on the forearms, the upper arms, the back of the neck and the forehead. His results showed that the *p*H of the extensor surfaces was very slightly greater than the *p*H of the corresponding flexor surfaces. Further work revealed that, in the cases of five adult females, there was a wide variation in daily *p*H of the normal skin. Such variation could not be ascribed to differences in environmental temperature, so it was concluded that, in order to obtain a correct value for the *p*H of skin surface, it is essential to make several measurements on any one person, before deciding just what the *p*H of his or her skin really happens to be.

Peck,[3] using similar techniques, measured the *p*H of the skin surfaces of the backs of seventy individuals, and found that, in one subject, the *p*H showed a variation of from 3.0 to 6.6, while the mean reading for all areas of the back was 5.07. Peck reported that male subjects seemed to have a slightly lower *p*H than females, a fact emphasized, also, by Blank. Peck extended his measurements over a period of about eight months, and found that change of temperature and humidity (due to seasonal changes) had little effect on *p*H.

R. G. Harry[4] studied the *p*H of exposed skin sur-

(*Continued on page 634*)

THE BRITISH PHARMACEUTICAL INDUSTRY

BY C.J. THOMAS, B.SC., M.SC., (ECON.)
SENIOR LECTURER ECONOMIC STATISTICS, UNIVERSITY OF SOUTHAMPTON, ENGLAND

Dr. Thomas' article is taken from his "The British Chemical Industry," which first appeared in the Journal of the Royal Institute of Chemistry, *January 1961.*

The British pharmaceutical industry, today employing some 50,000 persons, was virtually nonexistent before the First World War. In 1957 the output of drugs and pharmaceutical preparations was valued at 150 million pounds ($420 million) compared with 19 million pounds ($52.2 million) in 1935 and 15 million pounds ($42 million) in 1924. The higher general price level is partly responsible for the high value in the post-war period, but the increase is mainly the result of the growth of the industry—a growth which was especially great in the period 1935-50 when the labor force more than doubled. Within the same period not only was there a general growth of production but the composition of the industry's output has changed very greatly: antibiotics are important and there are many new synthetic drugs such as the sulfonamides, the various antimalarials, vitamins and hormones, as well as new biological products. This dynamism and progressiveness is linked with the rapid progress of the sciences of chemistry, pharmacology and bacteriology, and the industry's own research efforts to avail itself of the benefits which progress in these sciences can confer.

The industry is very varied, embracing a wide range of production activities and many different techniques. Production in this industry can involve the simple extraction of drugs from plants, the manufacture of simple fine chemicals, or complex syntheses of drugs, such as the corticosteroids and the hormones, and fermentation processes for antibiotics; the numerous biological products involve techniques for culturing bacteria in nutrient media, or sera and antitoxins in the bodies of animals. Besides this variety of basic therapeutic substances further variability is imposed by the need to compound or prepare the ingredients in a variety of ways for administration to different subjects in varying circumstances. Quantities vary enormously from a total output of a few pounds, as in the case of vitamin D_2, for example, to sulfonamides, barbiturates and antimalarials produced in hundreds of tons, and to aspirin in thousands of tons.

There are perhaps 260 firms (or because of combinations among them, 230 business units) engaged in pharmaceuticals manufacture, and approximately 260 establishments employing more than ten persons, but owing to difficulties of definition, not all establishments engaging in pharmaceuticals manufacture on a large scale are classified under the industry; for in-

stance, much of the aspirin is made in establishments classified with chemicals (general) and I.C.I. Pharmaceutical Division's production of basic drugs (being usually carried on in I.C.I. establishments mainly producing other chemical products) is largely excluded from the statistics relating to the drugs and pharmaceutical preparations trade.

Medicinal fine chemicals with an extensive non-medicinal use are usually manufactured in the other chemical trades, mainly the chemicals (general). On the whole, however, the manufacture of the basic ingredients is carried on within the trade, as are the subsequent processes, namely formulation and packaging.

There were 22 establishments (8.4 per cent of the total number) devoted mainly to the production of pharmaceutical chemicals: these were the larger establishments, and together they employed 14.4 per cent of the total labor force. It is in these establishments that the more complex production processes are carried on. The majority of establishments (nearly 80 per cent) are devoted mainly to the production of pharmaceutical preparations, a process involving formulation without any necessary production of basic ingredients. In such establishments wholesaling is a frequent accompaniment. Some of the establishments in this group, particularly the larger ones, produce therapeutic ingredients as well. The 31 establishments in the third group undertake the production of a variety of pharmaceutical products, including surgical goods and toilet preparations.

There is a broad distinction between firms in regard to the method of sales-promotion adopted; some 130 adopt the 'ethical' policy with sales promotion confined to doctors and the trade press; they are the manufacturers of prescription drugs, usually sold under proprietary names. About 80 firms produce publicly advertized drugs and the simple medicines only, and there are about 20 firms producing both kinds. As the publicly advertized medicines are usually simple in composition, the processes involved in their manufacture are usually uncomplicated, so that they are often conducted on a large scale by mechanized processes in establishments of moderate size. The scale of production varies greatly; some firms specialize in branded (or proprietary) products and, whether they advertize publicly or not, they tend to have a small range of products and relatively large outputs. Others, who combine branded products with common drugs which are not advertized, frequently produce a wide range of products; they have formidable production planning problems to cope with, as batches have to be changed so frequently.

Research is particularly important to the industry to enable it to maintain or improve its position. 'Innovational' research to discover new therapeutic agents is largely a matter of trial and error and so becomes very costly, with only the larger firms with considerable interest in the manufacture of pharmaceutical chemicals able to afford it. Formulation research, designed to present existing drugs in new forms improved in regard to methods of their administration, is more widely undertaken, as also is process research to develop more economical methods of production.

At the present time the industry is spending some five million pounds ($14 million) per annum on research, a figure double what it was ten years ago.

It is only relatively infrequently that really outstanding drugs are discovered, but the British industry has significant achievements to its credit, such as, synthetic antimalarial and antileprosy drugs, and new and improved vaccines for many diseases, from poliomyelitis to whooping cough, besides many other less notable discoveries.

The development of the industry has undoubtedly been considerably influenced by the inauguration of the National Health Service, which initially made drugs available free and later at a small prescription charge, to all according to need. But even if there had been no National Health Service the industry could not have failed to grow, and to grow considerably, under the stimulus of the post-war prosperity of the British economy and the undoubted advantages of the new drugs. Another concomitant of the growth in the demand for drugs has been the attraction of many foreign firms to this country. The entry of these firms has conferred advantages on the British economy in that the benefits of foreign advances in drugs have been made available by a relatively smaller expenditure of foreign currency than would have been necessary if the ready-made drugs had to be imported.

In the National Health Service, the industry is faced with a virtually monopolist buyer of prescription drugs, albeit a monopolist with incomplete control of purchases since it operates through a medical profession free to prescribe the drugs required by the patient. Conscious of its power, the Service has required drug manufacturers to reveal details of profits and as, in many instances, the profit rates have ap-

(*Continued on page 661*)

Tubes of Mycolog ointment, E. R. Squibb & Son's skin preparation indicated for treatment of skin conditions caused or complicated by bacterial infections, are packaged with expanded polystyrene foam by Foampak.

Plastic foams provide protection as well as being attractive

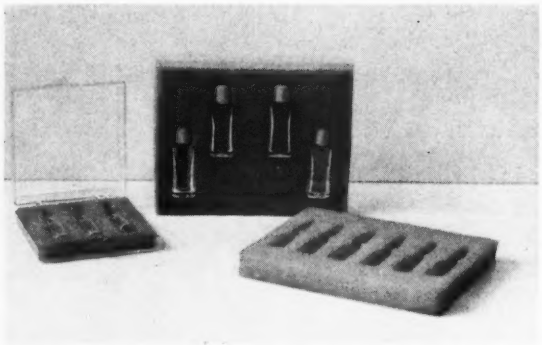
PLASTIC FOAMS

BY JERRY THORNTON

Plastic foams are lightweight, durable, insulated, and shock absorbant. They can be decorative, making it possible for an item to be shipped and displayed in the same container. However, it is important to select the correct type of foam for each packaging need.

Polystyrene. Polystyrene is processed from high-density granules or beads and can be molded, fabricated or extruded into many shapes, sizes and thicknesses. Drug samples and other items displayed in polystyrene foam inserts gain a three-dimensional sales appeal and are protected from damage in shipment.

Extruded polystyrene has been fabricated into bags, laminated to plastic sheets, boards, paper and



Flexible polyurethane foam inserts, by the Presto Manufacturing Company, Inc., give glass bottles and vials sales appeal and protect them against breakage. Because of its resiliency, urethan foam clings.

other materials, thermoformed into trays and made into pressure sensitive tapes, pads and wraps. Moreover, it is ideally suited for use in packaging cosmetics because it is grease-proof, water resistant, nonabrasive, nontoxic and free from odor.

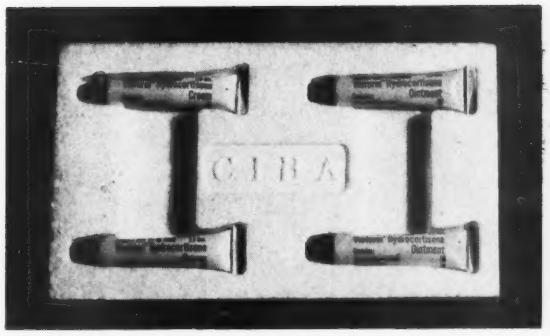
Polyurethane. By varying the formulation of a polyester, diisocyanate and water, polyurethane can be made soft and rubbery or hard and rigid. Soft urethane foam is best suited for packaging glass vials and bottles because it holds the container tightly in the package. Even if the package is turned upside down, the vial or bottle will not fall out.

Urethane foam is usually die-cut, but it can be molded in an inexpensive aluminum mold or foamed in place in a wooden, metal or corrugated container.

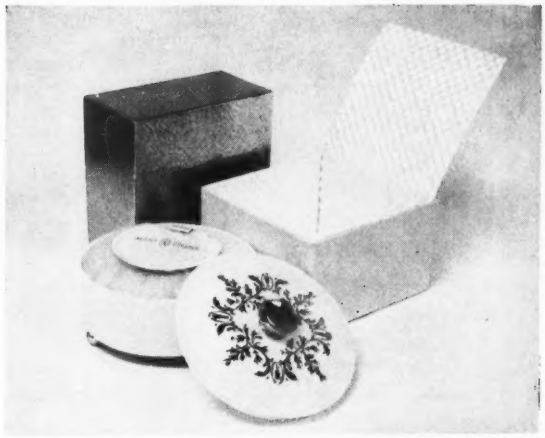
Plastic foams are made decorative in many ways. Besides the effects that are possible in the fabrication, molding and vacuum forming process, foams can be painted, dyed, flocked, stamped and printed. Sequins, metallic pigments and dyes can be added to the formulation during the expansion process to give a foam color and to produce special effects.

Although plastic foams are more expensive than conventional packaging materials, the slightly higher cost is almost eliminated by the reduction of shipping costs. There is no better lightweight protective packaging material on the market.

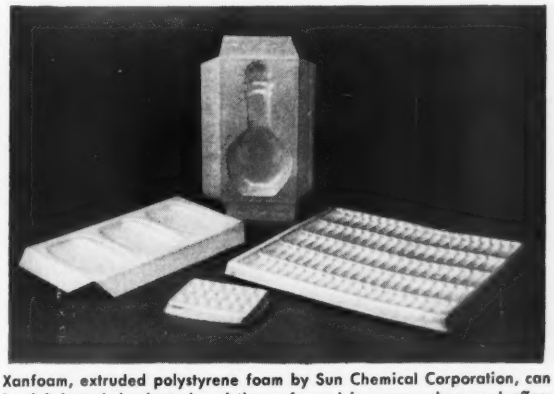
New methods, new machines and new techniques for producing plastic foams are being developed every day. These developments and the need for better packaging have given rise to a larger and more versatile market for plastic foams.



Ciba Pharmaceutical Products' physician's samples of Vioform Hydrocortisone Cream, for treatment of dermatologic disorders, are packaged in an expanded polystyrene foam insert, fabricated by Foampak Corp.



Mary Chess' new dusting powder box, by Fairfield Plastics, comes filled with one of six fragrances of powder. The extruded polystyrene foam insert is by Sun Chemical Corporation.



Xanfoam, extruded polystyrene foam by Sun Chemical Corporation, can be fabricated, laminated and thermoformed in many colors, and offers protection from temperature change, moisture, grease, and chemicals.

THE OUTLOOK IN MEN'S COSMETICS

BY PETER VAUTIN

A growing tendency on the part of men to make use of a greater variety of toilet articles and preparations opens a field of activity for the toilet goods department that has, in most cases, been undeveloped."

This was the opening sentence of a feature article in the May, 1916 issue of *Beauty Fashion*. This was hardly the beginning of industry recognition of cosmetics for men, but the article did signify the opening of a new phase in this field.

There has always been something cyclical about this branch of the cosmetic industry. Cosmetics for men did not become important until the great gift era during World War II, and although they lost some ground following this period, the last several years has seen a revival. Both retailers and manufacturers are appraising the market for these products with renewed interest.

A high percentage of the leading companies, today, have either a full line of men's cosmetics or specialties in this field. Many other manufacturers are studying the market.

Excluding the mass distributed shaving creams and hair preparations for men, $50 million of annual business is easily exceeded. The growth of men's cosmetics is centered in the gift package field. Cosmetics for men are finding status as the opposite side of the coin from the perfume industry, since as the sale of perfume depends heavily on gifts from men to women, the sale of men's cosmetics now is growing principally through women's gifts to men. Unlike perfume, where Mother's Day has become an important gift occasion, men's cosmetics, with the exception of one leading company, have neglected or muffed Father's Day.

Nearly 100 brands are available in men's cosmetics in the higher priced gift packaged field. Excluding Shulton and Yardley, the two companies which occupy a unique position in distribution, all of the others are sold either exclusively in department stores or in a somewhat broader distribution including a few thousand top drug stores. These lines normally have severe limitations in their distribution, primarily because of the ability of only a limited number of stores to participate in the gift business.

Considering all of the brands, there are no real

(*Continued on page 665*)

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Shulton's new Outdoor Lotion is presented as representing a new attitude in men regarding skin care. The new product, containing lanolin and five other emolients, is meant to fill the need of those who do not care for an alcohol type of lotion. This new "weather-guard" comes in a solid looking custom-molded bottle with the familiar Old Spice image retained. An attractive folding carton repeats the image.

Any dentist will tell you—regular brushing of your teeth is the big difference in dental care. And many dentifrice manufacturers will affirm that a little CMC makes a big difference in their product. Uniform viscosity regardless of batch, aging or temperature is the key to CMC's successful use in this and many similar products. For additional information on the use of CMC and assistance with your own formulations, write:

Hercules Cellulose Gum

VC60-7

Virginia Cellulose Department
HERCULES POWDER COMPANY
INCORPORATED
Hercules Tower, 910 Market Street, Wilmington 99, Delaware

THE HISTORY OF A SMALL AEROSOL LINE

BY L. BYRON KINGERY

ASSISTANT TO PACKAGING SUPERINTENDENT, LEDERLE LABORATORIES

The story of how and why a small aerosol production line was finally installed at Lederle Laboratories. Reprinted from the complete paper presented at the 23rd Annual National Packaging Forum of the Packaging Institute, Inc.

Lederle recently installed a small aerosol packaging production unit for a number of reasons. A low inventory policy makes it desirable to be able to move and produce rapidly; an aerosol line creates a more easily enforced in-process quality control; the more work done in the plant makes better use of other available equipment and of supervisory personnel; production costs are lower than it would be to have a contract packager do the work.

The company retains a contract packager when it does not have and can not justify expensive, specialized equipment to do a particular job. General company policy is to do as much work as possible within the plant.

Lederle first put an aerosol product on the market in early 1956. This was the Rhulispray with a cold fill propellant. At that time it was, and still is, packaged by Stalfort Pressure-Pak Corporation. During the next few years, the production department discussed the various benefits and problems that might develop if this product was to be packaged within the plant. The biggest problems were how to justify a relatively large capital investment in equipment with limited production demands and how "expert" they were, or could become, as aerosol production people.

By 1958, as sales volume held up well, they went as far as indicating in yearly future capital expenditure budgets the possible installation of their own aerosol production line. At this time, discussion of equipment needs, availability and costs, was begun with the various equipment manufacturers. Production problems were discussed with the propellant suppliers. The contract filler, who was very cooperative in pointing out production pitfalls and problems, was also brought into the discussions.

In 1958, the only aerosol product was still Rhulispray. The propellant loading is a cold fill for this product. With the need of compression and refrigeration equipment the company developed figures that indicated a needed production of two to three million units a year to justify purchase of equipment. Volume was not this great and the project was temporarily put aside.

As new products were being developed and new equipment was becoming available, Lederle started thinking of pressure filling the propellant. This would eliminate the need of costly compression and refrigeration equipment. The volume of production still did not justify installation of an automatic line that could compete on a cost basis with the contract packing cost.

In mid 1959, Vi-Tyke Syrup was put on the market. The propellant for this product is nitrogen. First packaging was done by the contract filler and a number of problems arose. The main problems were manufacturing and transporting the bulk product to Baltimore. The product required special handling with special trucks, trucks broke down, excessive periods of time in bulk storage was not desirable for high product quality, and so forth. To reduce these problems, and with small volume, Lederle production was asked what could be done to do the filling and packaging at the Pearl River plant with existing laboratory (pilot) equipment. This was the real start to installing an aerosol line.

During late 1959 and early 1960, the packaging production department filled and loaded Vi-Tyke Syrup cans with equipment borrowed from the development laboratory. This equipment consisted of a standard manufactured crimper and "home made" propellant (nitrogen) loader. This equipment solved the problem of handling the bulk product but was slow and expensive to operate.

In the spring of 1960 the company started packaging small glass aerosol containers of Aristoderm Foam

(*Continued on page 672*)

BEAUTY HINTS FOR STOCK BOTTLES

Stock Bottles looking for Closures with the flair that goes with smart design find an unrivalled collection at RICHFORD — a collection of closures and bottles so large and so varied that you have all the advantages of custom design at stock prices.

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"Your Product Deserves Richford"

THE GROWING MARKET FOR PLASTIC TUBES

In the past year, 40 leading manufacturers of liquid makeup have put their products in plastic tubes. Other drug and cosmetic products are currently being marketed and test marketed in plastic tubes. This trend is surprising in view of the difficulties encountered when the plastic tube was first marketed.

Lack of necessary technological skills, improper pricing and poor distribution gave it a bad name and almost drove it off the market. However, in the past few years these difficulties have been overcome.

Bradley Sun Division of American Can Company, the major producer of plastic tubes, attributes the recent popularity of the plastic tube to several factors. Primarily, the plastic tube is attractive, unbreakable, lightweight and cannot be deformed. The tube can be heat-stamped with two colors or printed with five colors, and, because the tube cannot be deformed, the manufacturers name and product name are visible at the most crucial moment—when the consumer is ready to buy a *new* supply of the product. This silent merchandising feature is not available with containers that become deformed or have labels that are easily removed.

Products that must be heated before use derive a distinct advantage over competing brands when packaged in plastic tubes. A plastic tube can be placed in boiling water and will not retain heat when removed. This increases its sales appeal.

Plastic tubes are available in capacities ranging from one-eighth of an ounce to ten ounces, with orifices from .028 of an inch to one-half inch in diameter. The smaller plastic tubes are ideal for sampling because they retain the original product image. Sponges, applicators and special caps can be injection molded to the extruded body of the tube for special merchandising effects.

However, not everything can be packaged in a plastic tube. Some products are not compatible with plastics and the shelf life of a product packaged in a plastic tube is somewhat less than the shelf life of the same product packaged in a glass or metal container. Also, plastic tubes are slightly more expensive than glass and metal containers.

Nevertheless, the sales appeal of the plastic tube is great and the plastic protection is adequate for most products. External coatings may be applied to retain aromas, flavors and scents. Internal coatings are used to prevent cosmetic and chemical properties from seeping out and escaping. J.T. •

New Perfection

DROPPING PARTS

"Repeat-Sale Insurance" for Liquid Preparations

The New Perfection line of functionally designed dropping parts gives satisfaction where satisfaction counts —in the hands of the user. To make sure the customer's first reaction to your product is 100% favorable, specify New Perfection. Our rigid inspection system assures the cleanliness and uniform high quality of every shipment.

New Perfection dropping parts will fit your bottle or can be furnished in combination with our Modernistic bottles in Amber, Blue, Green or Clear glass. Bottle sizes —⅛, ¼, ½, 1 and 2 oz. (Immediate shipment on all sizes and colors.)

AMEKINE (Oil - Resisting) synthetic rubber bulbs are recommended for use with oil products.

CALIBRATIONS can be applied on either glass or plastic droppers.

No. 1. Non-rolling, extra-depth Bakelite cap; thick flange rubber bulb; Saftee ball glass.

No. 2. Non-rolling, extra-depth Bakelite cap; thick flange rubber bulb; special bent glass (CALIBRATED IN COLOR).

No. 3. Regular plastic cap; thin flange rubber bulb; plastic dropper (or glass).

No. 4. Metal cap; oil-resisting Amekine synthetic rubber bulb; blunt glass (or plastic).

We can give prompt service on your special requirements for large or small quantities of droppers made from glass or plastic and in special packaging such as cellophane - wrap. Write for samples and prices.

PENNSYLVANIA GLASS PRODUCTS CO. INC.

428 N. CRAIG ST.
PITTSBURGH (13), PA., U.S.A.

Protect Product Purity

with fully corrosion-resistant

"Metalsmiths" Stainless Steel and Monel Utensils

Designed and constructed to meet the strictest requirements of drug and cosmetic usage. Many sizes in items shown, plus stock pots, batch cans, beakers, shovels. Try "Metalsmiths" utensils and compare the value. We ship promptly — anywhere.

WRITE FOR LATEST CATALOG — PRICE LIST

METALSMITHS

568 White St., Orange, N. J.

Specialists in Corrosion-Resisting Equipment

New BENCH-TYPE LAB FILTER

2-PIECE VACUUM FILTER for DIRECT CONNECTION TO DRAIN LINE

Designed for use where filtrate is waste and cake only is used. Two sizes: 2 gal. and 7 gal. working capacity; 12" and 20" I. D. respectively. Even the largest size is less than 10" high. Made from white chemical porcelain. Other chemical ceramic vacuum filters in capacities up to 150 gal.

287-G

Write for Bulletin F-40

CHEMICAL CERAMICS DIVISION

The U. S. STONEWARE Co.
Akron 9, Ohio

Packaging and Selling

"Supermarket sales of health and beauty products have probably surpassed the volume done on this catagory in drug stores. Furthermore, the sales of these products in supermarkets are growing all the time and will show even more volume in the future."

These are quotes from an interview with the vice-president in charge of sales of Procter & Gamble.

Because space is such a problem in the supermarket, Procter & Gamble is constantly working toward a solution by designing packages that are spacesaving and easy to stack, while being more appealing to the eye.

Examples of such packages are the new push-button Lilt package, the transfer of Ivory Liquid from a can to a plastic container, the packaging of Prell in transluscent plastic that allows the attractive green color to show through, and the development of larger caps on the company's toothpaste, which helps to prevent loss of caps down basin drains.

A debate is being conducted in the higher echelons of the cosmetic business, particularly among the top management in the prestige lines and in department stores, as to what has happened to the threat of French competition in makeup and skin treatment.

Four or five years ago, when Lancome opened the first import French treatment line in Sak's 5th Avenue, soon to be followed by Orlane on a somewhat more aggressive scale, it looked as if a brand new chapter in cosmetic history was to be written.

These lines had a great appeal to the leading fashion department stores. They were beautifully packaged, they were surrounded by glamor, they gave a new and different talking point from the long lineup of American treatment houses. Best of all, they were listed at a very high price with a very lovely markup.

When the president of a big Pacific Coast department store was asked why he gave so much space to a new company and a name completely unknown to the American public, in preference to several well-known American names who were clamoring either to get any additional space in this store or to be accepted as a new account, he cited the above reasons. He then went on to say that a store that is a leading style center must procure franchises which will remain exclusive fashion operations and not run out into mass or semi-mass distribution the minute they have a little success. What this man had in mind, as came out later in conversation, was that the French perfume industry has pretty well maintained its franchise philosophy, but not the American perfume industry. He may also have had in mind the quick reversal of policy that a number of companies had made, following mergers or changes in management. This trend in American marketing is not confined to our industry. A notable example which has left scars in the Gourmet Food line of General Foods.

At any rate, these two French lines did receive a reception that gave them an excellent opportunity to progress. Very soon they were followed by Dr. Payot, Stendhal and Jean Pierre, all of which are now, to some extent, distributed through leading department stores.

However, it seems evident that these French lines have not maintained the enthusiasm of their reception or the dynamic growth promised at the beginning.

For one thing, their prices have been substantially higher than the basic level of skin treatment or makeup, and equalled only by four or five American companies. Secondly, they are in a particular branch of the cosmetic business that requires a great deal of capital and a high degree of perseverance, determination and competence in marketing.

Perhaps the basic reason for their not going ahead is that an essential element for success of high-priced imported lines in such a thing as skin treatment or makeup is some sort of a plus over the multitude of American lines competing for a place in the top stores. This is a viciously competitive part of the cosmetic industry with a great many more contenders for position than any store has room to house.

It would seem that the French lines, although they have certainly gone overboard far more than any American product in extravagant claims for exotic hormones, serums, secret herbal juices and so on, have not been able to convince enough of their preliminary customers to try it again.

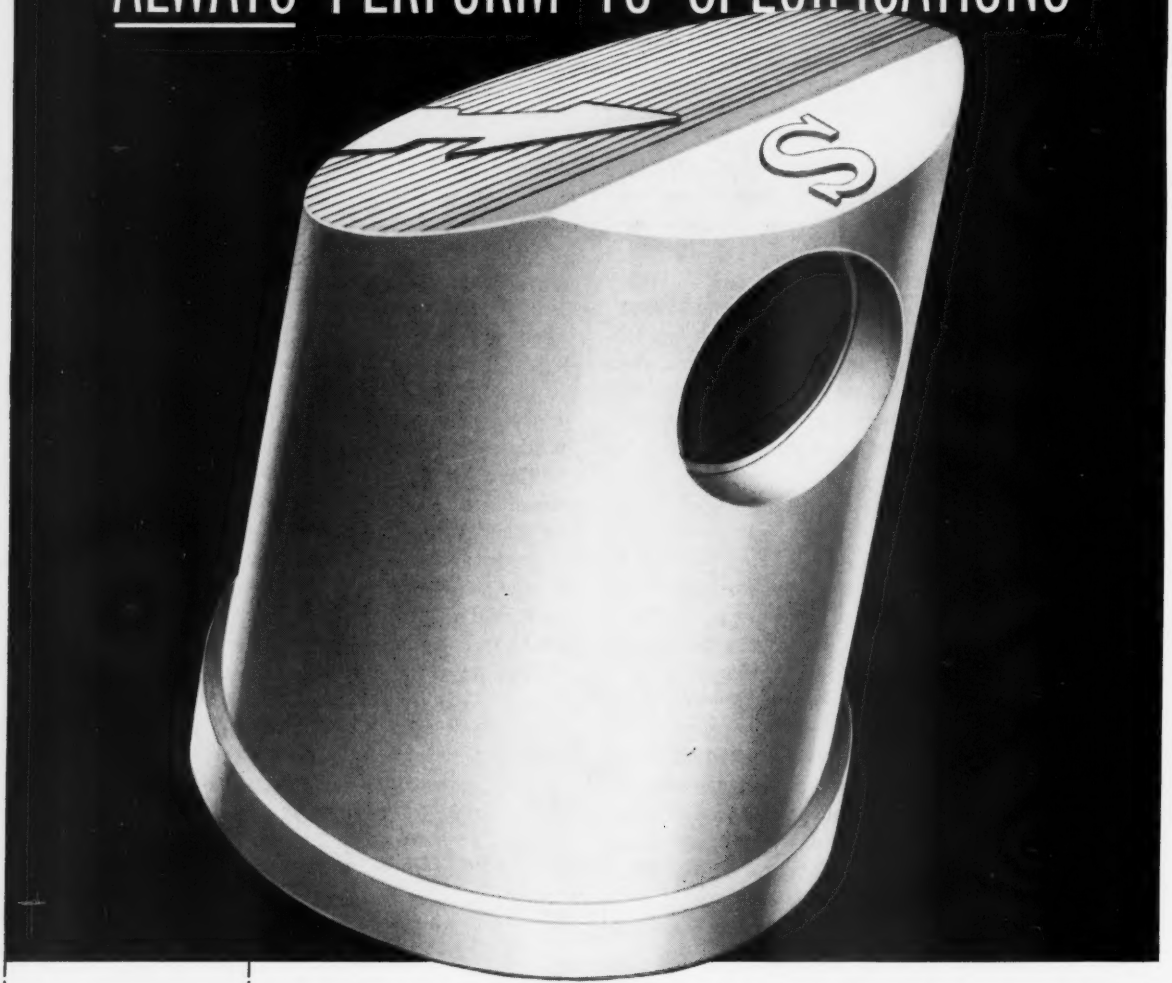
The suspicion is that all of these lines have promised a little bit too much, which, of course, cannot be considered too great a sin in the cosmetic industry because that has been a characteristic of a large part of the industry. But the trouble is that in promising too much they demanded a very fat price, and these combined factors seem to be enough to discourage a large enough repeat business to get rolling.

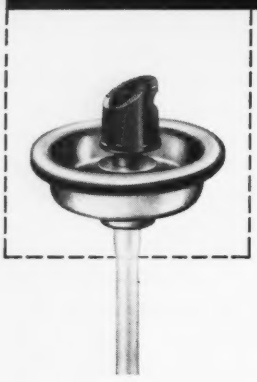
Johnson & Johnson believe that their introduction of a new mouthwash into the $60 million mouthwash market will have a very beneficial over-all effect on this large market.

J & J think that their advertising budget for Micrin, their new mouthwash, which is the largest advertising and promotion budget in their history, will start off a chain reaction of much more vigorous

From Schrader's unmatched facilities . . .

MECHANICAL BREAK-UP ACTUATORS THAT ALWAYS PERFORM TO SPECIFICATIONS





An aerosol product can only be as good as its actuator. You can be *sure* your millionth actuator will create the identical spray pattern as the first . . . with Schrader. ***Fact:*** This Schrader mechanical break-up actuator is 100% tested during production, and in addition spot-checked at 150°F. to 150 lbs. psi. ***Fact:*** Behind it are Schrader's unmatched engineering and research facilities, plus unique production techniques. ***Fact:*** This milestone achievement in aerosol engineering dispenses a product-tailored pattern . . . and always in the right direction.

Call on Schrader for the finest in aerosol engineering and technical help . . . from the company with the most modern facilities in the aerosol field.

Schrader® a division of **SCOVILL**

Aerosol Valves

A. SCHRADER'S SON • *Division of Scovill Manufacturing Company, Inc.* • **470 Vanderbilt Ave., Brooklyn 38, N. Y.**

selling and advertising.

As one of their executives said, "Although each manufacturer's promotion is aimed at increasing sales of his own brand, the net effect of such competition will be marked increase in over-all consumer demand for, and use of, oral antiseptics. New users will be recruited, and old users will use the product more frequently."

Max Factor has practically doubled its business in the past five years, and has doubled profits. Sales in 1960 amounted to $59,238,000, which puts Factor among the top five in this industry.

According to a report to the SEC, Factor's makeup products accounted for 39 per cent of sales and fragrance products for about 16 per cent.

This seems to mean eight and a half million dollars at wholesale prices for fragrances, which certainly puts Factor among the top five in fragrance sales.

A considerable part of the business, certainly exceeding 35 per cent, is done abroad. The largest country, England, does 18.5 per cent of net sales.

Factor cosmetics are sold in 122 other countries, none of which do more than 5 per cent. The larger markets include France, Italy, Australia, Germany, Mexico and Brazil.

Redbook Magazine's new market report on men's hair grooming and treatment preparations outlines the growing pains and the final emergence of what may truly be called a men's hair products industry. Needless to say the recent popularity of short hair styles that require little attention has not helped this growth.

The report covers the kinds of hair preparations marketed, industry and product development, advertising expenditures and consumer use and brand preference. Also included is a summary of the high points of a variety of published surveys on consumer use, brand preference and purchasing habits, plus a bibliography of local market studies.

The Sunbeam Corporation, maker of electric shavers, is entering the men's toiletry field with what it claims is the first combination before-and-after electric shave lotion. This product is called Pre/Aft.

The haste and the waste in new product development has not been limited to small companies. Here are a few examples cited at a recent meeting of the appliance manufacturers.

"Philco brought out the new Predicta TV set. It took Philco a full year to realize that Mrs. Consumer would not accept a TV set that looked like a gas pump; then they dumped them all at tremendous losses.

"Mr. GE put out a refrigerator with circular revolving shelves that looked fine to everyone at the factory. The only trouble with it was that Mrs. Consumer didn't like it because her mustard jar kept falling over and splashing on her nice clean floor.

"Mr. Bendix put out a rubber tub washer which was a real low-cost item to produce and promised to capture the low-end laundry market. The only trouble with it was the clothes couldn't be squeezed dry enough for Mrs. Consumer. She wouldn't buy it."

Similarly, "Ice makers are fine in refrigerators and fill a real need—on paper. The only trouble is that Mrs. Consumer doesn't want to be bothered with hooking up pipes to the refrigerator and is perfectly happy with four ice cube trays at a time."

Misery likes company and this will undoubtedly make a great many people feel a little better. The truth is, however, that the endless record of new product failures we have been producing in the last ten years can only be paid for under booming business conditions.

Any time consumer purchasing stabilizes, that is the time to be super cautious in pre-testing new products before too much money is invested.

Here is a new index for the economists to use in spotting a recession or the return of good business. We particularly like this index because it gets right down to brass tacks without a lot of questionable statistics and gobbledy gook.

This is by the president of an association with more than 5,000 food stores. "Food sales could be the most accurate economic barometer of our time. For example, when the sale of starchy foods starts up and the sale of proteins drop, that means that money at the working level is beginning to tighten. When the sale of proteins and starchy foods adhere to their regular percentage, times are good."

One of the biggest turn arounds in the history of cosmetics has been Hazel Bishop. Not too long ago this company was riding high, wide and handsome with a very provocative television campaign. However, in a recent interview, an attorney for this company said, "Hazel Bishop hasn't been selling merchandise to the extent it could earn money. Sales declined steadily in the last four years and fell to $7,889,113 in the fiscal year ended October 31, 1960. In the six months ended April 30, volume was $3,285,881, down from $4,006,972 in last year's first fiscal half." The attorney then added, "The company hasn't had the money for advertising it had in previous years."

According to the original prospectus, Hazel Bishop expenditures in 1957 was 44 per cent of net sales and declined to 25 per cent of net sales last year and 20 per cent in the first half of the current fiscal year.

It will be remembered that when Hazel Bishop first went on television and began its radical growth, that the company's biggest stockholder and the man who had full management also, owned and headed his own advertising agency. This made an advertising expenditure of 44 per cent of net sales more easily explained. •

NEWS IN PACKAGING...

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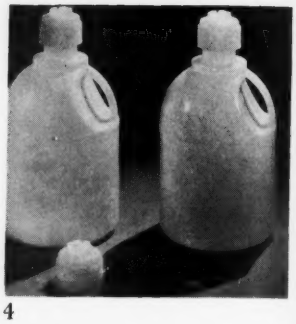
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1. Tablets Tylenol by **McNeil Laboratories, Inc.,** for temporary relief of minor aches and pains, are packaged in glass bottles with side labels requiring less shelf space.

2. Modern blue and red design of new bottle and carton for **E. R. Squibb & Sons** aspirin, was created to catch the consumer's eye.

3. Vibrant blue color, old Spencerian script, and early American character of new package for **Shulton's** dusting powder and spray cologne, give impact at point-of-sale, while retaining product identification.

4. Owens Plastic Company's new 5-gallon plastic jug of conventional polyethylene has an extra-strength grip for safe and easy handling. It is recessed to permit a form-fitting overpack.

5. All plastic container for 5 Day Stick Deodorant, by **Five Day Laboratories,** division of Associated Products, Inc., is of molded polypropylene, with a screw-type closure.

6. Contac capsule, by **Menley and James,** a new preparation for relief of congestion, contains 600 tiny pills that disintegrate gradually and provide continuous relief for up to 12 hours.

7. Container for **General Electric's** new automatic toothbrush set converts quickly into a set-up display for the drug counter.

8. Package for **Robert Clark Company's** bubble bath, designed by The Dobeckmun Company of flexographically printed .003 polyethylene, was awarded Merit Achievement—Polyethylene Bags and Pouches, at the 6th National Flexible Packaging Competition.

Packaging Machinery Manufacturers Directory

A directory of leading packaging machinery manufacturers, containing the names and addresses, and sales office listings of over 80 PMMI members, supplants the Institute's last directory. All buyers will periodically receive insert sheets to keep the directory up to date. Copies at $7.50 each, are available from the PMMI, 60 East 42nd Street, New York City 17.

Polypropylene Film

Avisun, a jointly owned affiliate of the American Viscose Corporation and the Sun Oil Company, will manufacture a new bi-axially oriented polypropylene packaging film, early next year. It is said to be stronger, clearer and more versatile than polypropylene films now being produced.

Label Coating

A new coating process that makes water-based adhesive labels peelable after the adhesive has dried, has been developed by Papekote, Inc. The process can be used on any base paper, and creates a surface which can be glued to surfaces and then peeled easily with a lifting action.

NEWS and VIEWS

BY TED KLEIN PUBLIC RELATIONS DIRECTOR*

How Much Is Enough?

At lunch not too long ago, a friend told me of his decision to leave his job for another. He had been with his present employer for almost eight years and was a key man with the firm. He explained to me that he was changing jobs because of the opportunity offered by the new firm, not only because he was offered a significant salary increase.

Two days after he had submitted his resignation, the owners of his firm approached him with a counter offer. It involved a $5,000 raise, as well as a shift in positions to a more important job.

This is a familiar story, yet the questions raised by my friend were interesting to me. "Why," he asked me, "did they wait until I decided to change jobs before they found out how important I was to their operation? After all, I didn't change so suddenly overnight as to be worth $5,000 more, or suddenly become more able to fill a far more responsible job."

He told me that if he had been approached with this new job offer at a time when he was already earning the additional $5,000 and functioning in the more responsible position, he would never have listened to the man who succeeded in luring him away from a job where he had spent almost eight years of his life.

Since many management executives read this magazine, perhaps they can profit from this little anecdote. Are there men now working for you who should be given more responsibility and more money? If there are, you run the risk of losing them unless you act to remedy what can become an unfortunate situation.

33 Years With DCAT

The heart of any trade organization beats through the executive who runs it. For 33 years Helen Booth has been associated with the Drug, Chemical and Allied Trades Association, and now she has been elected executive vice-president.

Many leaders of the drug chemical industry have learned that she is an excellent and charming lady executive—one who smooths over much of the headaches associated with taking a job as a voluntary officer of DCAT.

Her biography is in the women's Who's Who. She has been director of the American Society of Association Executives and the New York Society. She is truly an outstanding example of a successful woman executive. We wish her a second 33 years of happy association with the DCAT.

The Inequity Of It All

For no reason at all, I thought you might be interested in a recent experience of a part-time author I know. He wrote a book which was published a year ago. It took him almost three years to do it, working nights, weekends, and vacations. The last year of the three, he spent almost every Saturday and Sunday working on the book, despite the strong attraction exerted by his wife and family for him to spend his free time with them.

The book was sold to a leading publisher and subsequently to a leading paperback publisher. To date, the hardcover edition has sold about 5,000 copies at $3.95 per copy. More than enough to have made a profit for the publisher. The paperback will be out soon—it has already been presold to several advertisers who have agreed to purchase space to sell their goods to the paperback purchasers. The publishers will print 150,000 paperback copies each year to sell for 50 cents.

A quick calculation of the total receipts for the book show that almost $100,000 will have been earned for the two publishers before their publishing year is over. This does not include whatever the advertising income amounts to for the paperback. The publishers' cost, I estimate, to be about $7,500 for the hardcover and $25,000 for the paperback.

The whole point of this piece is to tell you that with all the above income for the publishers, the author to date has received about $2,000—after all, he only wrote the book. It appears that creativity is not the most important element in the business of books. So if you have a fantasy about writing a book and retiring for life on its royalties, you better forget it.

Forebesider For Sale Cheap

The following classified ad recently appeared in a South Dakota weekly newspaper:

> MUST SELL: Leaving t o w n. Brand new Forebesider with built-in Hemingway. Can be used left or right handed. Cost over $250. Unemployed, need money badly, and will sell for $25 cash, and deliver to your home. Write Box 32 c/o Press & Dakotan.

The editor of the paper reported to a friend of mine that he had several buyers for the item mentioned soon after the ad appeared. Why the interest in a Forebesider?

Well a Forebesider is a nothing . . . just a joke, yet there are people who will pay $25 for something they could not possibly use. Makes me feel that advertising can sell anything to some idiots. Heaven help us if they proliferate.

Australian Medicine

I have just reread a book by Sir Earle Page entitled *What Price Medical Care*, published by J. B. Lippincott in 1960. This is a description of how Australia set up their government aid program to strengthen *voluntary* medical insurance.

Dr. Page was a former Prime Minister of Australia and Minister of Health for his country. He came to the United States recently in an effort to interest our medical experts in using the Australian plan as a blueprint for a new type of health program in the USA. The Australian program is a kind of socialized medicine but one which requires each individual to pay for his hospital and physician care. The state of Australia contributes to supporting health care but the individual is still the bulwark in this plan.

I think the book should be read by everyone who is interested in knowing what the alternative might be to the British system and the Social Security Program proposed by the current administration.

*Paul Klemtner & Company, Inc

UNITED
AIR LINES

New Products

PHARMACEUTICALS

Celestone (Schering) is indicated for allergies, inflammatory eye diseases and other conditions that are generally responsive to corticosteroids. It increases sodium excretion and has strong anti-inflammatory effects even with a relatively low dosage. Single tablet strength is 0.6 mg.

Quelidrine Cough Syrup (Abbott) is a fruit-flavored preparation effective against acute coughs of all kinds. In bottles containing 4 fluid ounces, 1 pint and 1 gallon.

Onamine 12 and Onamine 14 (Onyx), new tertiary amines developed for use as lubricating oil additives, activators, corrosion inhibitors, hardeners for epoxy resins, and catalysts for polyisocyanates, can also be used as antioxidants, vulcanization accelerators and polymerization inhibitors.

Geritol Breakfast Vitamins (Williams) are one calorie vitamin tablets that contain vitamin B, calcium panthothenate, vitamins D, E, and iron. In bottles containing 30 and 90 tablets.

NuEstro (Gateway), a synergistic combination of estradiol benzoate and diethylstilbestrol for exogenous therapy is available in four concentrations of compressed tablets.

DBI-TD (U. S. Vitamin), a new oral hypoglycemic agent for treatment of diabetes, is physically modified for timed-disintegration. Capsules contain 50 milligrams each.

Thorexin Coftabs (Gillette) are chewable cough tablets containing an anti-tussive ingredient, d-methorphan, and no narcotics.

Listica (Armour) is a new tensitropic drug that allays tension and anxiety without curtailing normal activities.

Betatrin (Gateway), containing B-complex, vitamin C and iron, is indicated as a dietary supplement in menopausal and menstrual disorders and as an adjunct to estrogen, progestin and other hormone therapy.

Getric (Aarbern) is a fast-acting decongestant for relief of sinus, head cold and hayfever discomforts.

Contac (Menley & James), a new proprietary preparation, provides continuous relief for up to 12 hours, from head cold congestion and hay fever, with a single dose. Each capsule contains more than 600 tiny pills that disintegrate gradually for constant therapeutic action.

Tablets Tylenol (McNeil), an analgesic and antipyretic, is effective for the temporary relief of minor aches and pain of arthritis, rheumatism, headache, dysmenorrhea, myalgias and neuralgias. In bottles of 100 tablets.

L-Epifrin Ophthalmic Solution (Allergan), for the levo-epinephrine treatment of chronic simple glaucoma, is available in a single unit plastic dropper bottle requiring no refrigeration or mixing.

Vioform-Hydrocortisone (Ciba), cream or ointment, is a nontoxic, practically nonsensitizing preparation for the relief and healing of itching and inflammation caused by dermatologic disorders.

Renese (Pfizer) is a new oral diuretic and antihypertensive agent, that also controls blood pressure in hypertensive patients, with or without edema.

Heparin Sodium (Upjohn) is a sterile, standardized preparation of the physiological anticoagulant obtained from animal tissue, dissolved in an isotonic salt solution and preserved with phenol, 0.5 per cent. Indicated for the prevention of blood clotting, as an anticoagulant in blood transfusions, for the prevention of thrombosis and the extension of thrombi and embolism.

Noscomel Compound (Squibb), cherry-flavored cough syrup containing Noscapin, a nonadditive, antitussive agent. It is as effective as codeine without codeine's side effects.

Gestest (Squibb) are tablets for pregnancy diagnosis that are accurate from the very first intimation of pregnancy. Each tablet supplies 2.5 mg. of the progestational agent, norethindrone acetate and 0.05 mg. of the orally active estrogen. Failure to bleed is a positive test and withdrawal bleeding is a negative test.

Blephamide Ophthalmic Liquifilm (Allergan), affords continuous 24-apy for the treatment of blepharitis.

Sensodyne (Block) is a flavored dentifrice for treatment of dental hypersensitivity containing strontium chloride, a desensitizing agent.

Actin (Pertussin) is a cough mixture containing no antihistamine or harmful, habit-forming drugs, suitable for children and adults.

COSMETICS

John Robert Powers' new Grand Illusion liquid matte-finish makeup comes in all the company's shades.

Angelique's Sun Up is a sun-tan preparation using **Du Pont's** cellulose sponges saturated with Angelique's nongreasy lotion. Each sponge contains enough for one full application, and is individually packaged in a sealed envelope lined with foil.

Lentheric's new Tweed hand and body moisturizing lotion is a blend of rich emmollients with a woodsy fragrance.

Rosine Products' Glamour de Rose, milled, rose-shaped, beauty and bath soap, has a natural rose fragrance and comes in pink, yellow, violet and blue.

Max Factor's Sheer Genius extra cover formula is a natural matte-finish makeup for greater makeup coverage and better concealment of skin imperfections.

Alberto VO5 Conditioning Creme Rinse, an after shampoo rinse, makes just-washed hair manageable.

The Fuller Brush Company's new line of cosmetics and toiletries, From a Misty Garden, includes spray cologne, toilet water, floating bath droplets, powder sachet and cream sachet.

Revlon's fall eye shadow shade, Fresh Emeralds, is one of eight greens included in Revlon's Eye Makers A La Carte collection.

Helena Rubinstein's new Herbessence Collection includes ten beauty and bath preparations containing a variety of herb extracts.

The man in the pink shorts and he just flew in from Timbuktu.

While the caption over the picture is, of course, an exaggeration today, the unique attributes of Giv-Tan F, could make it true tomorrow. Already, millions of sun bathers are using suntan preparations that employ Giv-Tan F as the sun-screening agent . . . with complete satisfaction. Due to its exceptional absorption capacity, the cost of using Giv-Tan F is unusually low. You need only 1½% in contrast with up to 5% for other sun screens, thus savings are substantial.

Giv-Tan F is a miscible oil that dissolves quickly and mixes readily in all media used for sun-burn protection. It is non-irritating to skin and harmless to fabrics. You'll find it works well in lotions, oils, creams and hydro-alcoholic solutions.

If you seek a proven, highly effective sun-screen that will save you valuable production dollars, try Giv-Tan F . . . another successful, fully researched product of Sindar Corporation. Send for technical information today.

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NEWS

General News

Dr. Charles E. Lyght (right), director of medical publications of Merck Sharp & Dohme Research Laboratories, receives the "Distinguished Service Award" of the Ameriran Medical Writer's Association from Dr. Theodore Van Dellen, association president.

Perfume Materials Conference

Rutgers University will hold a two-day conference on *An Analysis of Quality Standards of Perfume Materials*, December 6th and 7th at the Military Park Hotel, Park Place, Newark, N. J. The methods and techniques of instrumental analysis will be related to the individual creativeness of odor analysts and chemists. Scheduled speakers are: Al Fiore, V. Daniel Johnston, Givaudan Corporation; James Rodgers, Fritszche Brothers, Inc.; Lewis Hediger, Trubeck Laboratories; Fred C. Theile, Donald E. Dean, Shulton.

Etienne Appointed Eaton Fellow

The 1961-1962 Eaton Fellowship established at Michigan State University by the Eaton Laboratories Division of The Norwich Pharmacal Company, has been awarded to Harry Birt Etienne, B.S.,D.V.M., to continue research on canine enteric infections under Dr. Gabel H. Connor and Dr. Robert M. Schirmer.

Grunberg To Speak

Dr. Emanuel Grunberg, director of chemotherapy for Hoffmann-La Roche, Inc., will be guest speaker at a meeting of the New Jersey Industrial Physicians' Association on October 20th. Associated with Hoffmann-La Roche since 1946, Dr. Grunberg is author of some 50 papers on chemotherapy and co-author of *Drug Resistance of Micro-Organisms*.

Stanford Research Institute Appointments

Dr. Bruce Graham has been appointed director, and Dr. Gordon W. Newell, assistant director, of the newly formed Life Sciences Division of Stanford Research Institute. Chairmen are: Dr. Gordon W. Newell, toxicology; Dr. Leon Goodman, bio-organic chemistry; Dr. W. A. Skinner, pharmaceutical chemistry; Dr. G. A. LePage, biochemical oncology; Dr. Gustave Freeman, medical sciences; Luman F. Ney, biochemistry; Dr. Dorothy M. Powelson, microbiology; Dr. Leon S. Otis, biobehavioral sciences; and Dr. Doris H. Calloway, food sciences and nutrition.

Gordon Research Names Chairman-Elect

Dr. Amel R. Menotti, vice-president and scientific director of Bristol Laboratories and a trustee of Gordon Research Conferences, informal week-long meetings of scientists held each summer in New Hampshire, has been chosen chairman-elect of the Gordon board of trustees.

Edouard Hache Visits U.S.

Edouard Hache, creative perfumer and director general of Firmenich et Cie., Paris, is currently visiting the company's offices in New York, Chicago and Los Angeles, as well as perfume and cosmetic firms in this country associated with the French market.

EDOUARD HACHE

Mossbauer To Be Honored

Dr. Rudolf L. Mossbauer, a senior research fellow at the California Institute of Technology, will receive an Elliott Cresson Medal from the Franklin Institute for his discovery of recoilless emission of gamma radiation of atomic nuclei. His theory, announced publicly in 1958, has been used by physicists to take precise measurements of time, gravity, magnetism and the structure of the nucleus.

Neill Named Chairman

Don G. Neill has been named general conference chairman for the technical conferences to be presented concurrently with The Material Handling Institute Great Lakes Show at Cobo Hall, Detroit, on June 19 to 21, 1962.

Packaging Foundation Appointments

Orlin E. Johnson, vice-president of Bristol-Myers Products Division, has been appointed chairman of the Michigan State University School of Packaging Foundation, Inc. Lawrence H. Zahn, director of purchasing and packaging development at Ciba Pharmaceutical Products, Inc., has been appointed a member of the board of trustees. The foundation is a nonprofit corporation established to provide financial assistance to the school, which offers a four-year university program leading to a B.S. in packaging.

ORLIN E. JOHNSON

McAndrew Honored

Dr. M. J. McAndrew, a physician in the employee health department at Abbott Laboratories, has been named a certified specialist in occupational health by the American Board of Preventive Medicine.

European Markets

Contimart, an international marketing and research company, has conducted an extensive study of the cosmetic and toiletries market in 14 western European countries. The results of their investigation have been compiled in 200 pages of working papers. A summary of these, along with the results of other investigations, have been combined in a 55-page booklet, "Marketing Cosmetics" priced at $20.00 A limited number of copies of *Working Papers: Cosmetics in Western Europe* is available at $125.00 each.

Information may be obtained from: Contimart AG, Lexhof, Militarstrasse 76, Zurich 4, Switzerland.

Roesch Receives Award

The American Society of Association Executives conferred the Key Award on C. J. Max Roesch, executive secretary of the Texas Pharmaceutical Association, as the most outstanding state association executive in the United States.

SCC To Honor Reed

Raymond E. Reed, vice-president in charge of technical operations for the Toni Company, has been chosen by the Society of Cosmetic Chemists

RAYMOND E. REED

as the recipient of its 1961 Medal Award for his work in bringing science to the industry. Mr. Reed is the inventor of 16 patented ideas relating to hair waving and was a pioneer in the development of machineless permanent waving. Mr. Reed is a founder of the Society.

Graham Fund Drive Chairman

William B. Graham, president of Baxter Laboratories, Inc., has been named chairman of the Drug and Chemicals section of the 1961 Crusade of Mercy fund drive, and Ralph A. Olson, vice-president and manager of the Chicago office of S. B. Penick & Company, is co-chairman. Funds collected will be used by the Community Fund and 150 agencies, including the Chicago chapter of the American Red Cross.

Jarowski Named Chairman

Charles I. Jarowski, director, pharmaceutical research and development, Chas. Pfizer and Company, Inc., has been appointed chairman of the fourth annual National Industrial Pharmaceutical Research Conference, to be held at King's Gateway, Land O'Lakes, Wisconsin, June 10 to 13, 1962. Methods and bases for the preparation of pharmaceutical solutions will be discussed at the conference.

Expansions, New Plants and Acquisitions . . .

New Florasynth Office

Florasynth Laboratories, Inc., has established a Philadelphia sales office at 1418 Walnut Street.

Procter & Gamble Expands

The Procter & Gamble Company plans to expand its Winton Hill Technical Center, one of its major centers for developing new products and improving existing brands, by 50 per cent. Construction will begin late in the fall.

New Lilly Company

Eli Lilly and Company has formed Eli Lilly del Peru, S. A., to distribute its line of pharmaceuticals in Peru. The new company, Lilly's sixteenth operation outside the U.S., is located at Lima.

Miles Expands

Miles Chemical Company, a subsidiary of Miles Laboratories, Inc., has begun construction of a two million dollar citric acid plant at Haifa, Israel, to be completed in 1962.

The company has also made plans to join with Ledoga S.p.A., an Italian chemical firm, to form a new corporation, Miled S.p.A., to conduct a broad scientific research program on applications of dialdehyde starch and its derivatives.

Stein, Hall Acquires Interest

Stein, Hall Company, Inc., has acquired an interest in Meypro AG and is organizing a new chemical company in Switzerland for the sale of products manufactured by both firms. Meypro AG produces natural gums and chemically treated derivatives.

Stein, Hall will also form a company with Henri Hefti of Milan, Italy, president of Organa Trust, that will hold a major interest in Pakistan Gum Industries, Ltd., manufacturer of natural gums. The new company will perform research, development, technical and sales services for Pakistan Gum.

New Rorer Laboratory

William H. Rorer, Inc., has opened new research laboratories in Fort Washington, Penna. The new building contains 27 laboratories for chemical, biological and pathological research. An office building, adjacent to the laboratories, will be completed late this year.

Subsidiary Markets Contac

Smith, Kline & French Laboratories has formed a proprietary subsidiary, Menley & James Laboratories, to market Contac, its new preparation for relieving the congestion of colds and alergies.

Lanolin Plus and Hazel Bishop Consolidate

The boards of directors of Lanolin Plus, Inc., and Hazel Bishop, Inc., have approved the agreement and plan of consolidation of the two companies. The surviving corporation will continue as Hazel Bishop, Inc., with the provision that seven members of the nine-man board of directors will be selected by Lanolin Plus, and the remaining two by Hazel Bishop. Products of both firms will be marketed. Lanolin Plus recently acquired Lilly Dache, Inc.

Parker Acquires Hart

A. J. Parker Company has acquired all assets of Hart Drug Corporation, makers of Efedron nasal jelly and other ethical drug specialties. Hobart C. Jeter, president of Hart, has been named president and general manager of Parker, while Joseph Shore, founder and former

president of Parker, continues as chairman of the board of directors.

National Starch Selects Site

National Starch and Chemical Corporation has purchased land at Seadrift, Texas on which to build a four million dollar vinyl acetate plant. The annual capacity of the new chemical facility, to be in operation in late 1962, will be 45,000,000 pounds, most of which will be for captive use.

Baird Purchases Barlow

Baird Chemical Industries, Inc., has acquired Barlow Chemical Corporation by cash purchase. Barlow, producer of Barquat quartenary ammonium compounds and Barlene tertiary amines, operates production and research facilities at Ossining, New York.

Dorsey Builds

Ground has been broken for the new Dorsey Laboratories plant at Lincoln, Nebraska. Dorsey, a division of The Wander Company, expects the new facility to be completed in the summer of 1962.

J & J Purchases European Firms

Johnson & Johnson has contracted to purchase Laboratoria Pharmaceutica Dr. C. Janssen N. V., in Turnhout, Belgium and Research Laboratorium Dr. C. Janssen N. V., in Beerse, Belgium. Two Janssen affiliates in Holland and West Germany are also included in the purchase.

Hercules Expands Overseas

N. V. Hercules Powder Company, The Haque, has opened a new chemicals plant at Zwijndrecht, The Netherlands. Hercules Kemiska Aktiebolag, the Swedish affiliate, has opened a new paper chemicals plant at Lilla Edet, Sweden.

Hooker Receives Argentine Approval

The Argentine government has approved Hooker Chemical Corporation's investment in Duranor, Industrias Quimicas Sociedad Anonima Industrial y Comercial, an Argentine affiliate formed to produce phenol, using the Hooker process.

Rexall Acquires White Metal

Rexall Drug and Chemical Company has agreed to acquire White Metal Manufacturing Company for an undisclosed number of Rexall shares. The acquisition of the metal tube manufacturing company complements the company's container and packaging division.

Research Consolidated at Continental Can

The Technical Center, Continental Can Company's twenty million dollar packaging research complex, has been opened in Plainfield, Illinois. The new center consolidates research activities for all but one of the companies product divisions.

Robbins New Facilities

The chemical department of McKesson & Robbins, Inc., will build new facilities for chemical branches in Little Rock and San Antonio. This brings the total number of chemical department facilities to 54.

Schering Builds

New pharmaceutical manufacturing and quality control facilities are being erected near Montreal by Schering Corporation, Ltd. The one million dollar plant will front the Trans-Canada Highway west of Montreal and will be in full operation by spring, 1962.

Hawaian Office

The Dow Chemical Company has opened a district sales office in Honolulu to serve the Hawaian Islands. Donald J. LeGassey of the Seattle office has been appointed district sales manager.

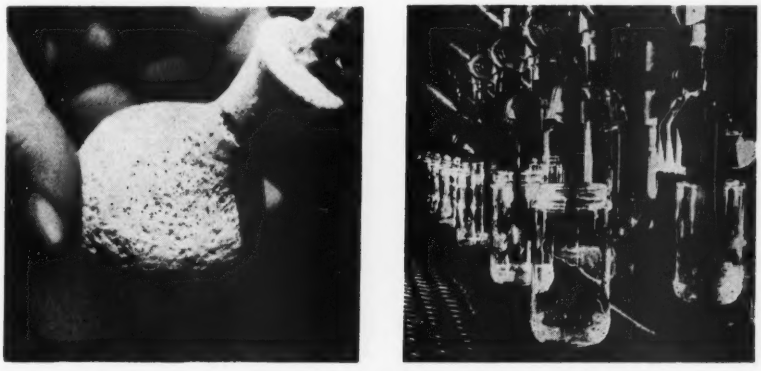
Sulray Acquires Mayer

Sulray, Inc., has contracted to purchase the L. Mayer Company, manufacturer and distributor of hair products. This is the company's third acquisition since June.

Warren-Teed Begins Construction

The Warren-Teed Products Company has begun construction of a new unit, for the care and maintenance of large and small animals, one of several scheduled under an expanded research program.

Company News . . .



Over 3500 years ago, man made the first containers of glass by forming a core of sand around a solid metal rod and dipping it into molten glass. The hot liquid adhered to the core, and when the liquid cooled and hardened, the sand was scraped out leaving a glass container in the shape of the core. Above, a line of newly made glass containers leave the forming machine on their way to the annealing oven to be cooled.

Glass Film

The story of man's search for the ideal container through the ages is depicted in a color film, *Sealed in Glass*, prepared by The Glass Container Manufacturers Institute, Inc. The search is recreated by props on loan from leading museums and historic collections. Available for showing upon request to The Glass Container Manufacturers Institute, Inc., 99 Park Avenue, New York City 16.

Bristol-Meyers Presented Award

The Bristol-Meyers Company will receive a first place award for having issued the best stockholder annual report of the pharmaceutical industry in the twenty-first annual report survey sponsored by Financial World. A bronze Oscar-of-Industry trophy will be presented to Frederic N. Schwartz, president of the firm.

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Pharmaceutical Film Honored

Better Medicines For A Better World, sponsored by Parke, Davis & Company, won first prize in the Second International Industrial Film Festival in Turin, Italy, as the best scientific research film. It was awarded a special gold medal as the best film in the field of pharmaceuticals.

CIBA Public Service

Ciba Pharmaceutical Product's 60-man speaker's bureau, is available to present a 20-minute talk entitled The Medical Revolution. Speaking engagements may be requested through the company.

Guest Pac Sampling Program

Over 100,000 male college students will receive one million free samples of drug and toiletry products late this fall, through mass distribution of Campus Pacs by the Guest Pac Corporation. The program to sample the college market will reach almost every male student on 20 campuses. The distribution will be supervised and effected by Eugene Gilbert & Company.

AMA Film

Medifilm Report III, presenting highlights of the American Medical Association's 110th annual meeting, has been made available to medical and allied groups. The film is sponsored by Schering Corporation in cooperation with the AMA Department of Medical Motion Pictures and Television. The film includes scientific exhibits, lectures and panel discussions. Copies may be obtained from the AMA, 535 North Dearborn Street, Chicago 10, Ill., or from the Audio-Visual Department, Schering Corporation, Union, N. J.

Chemway Sells Land

Chemway Corporation will sell 235 acres of land in Wayne, New Jersey to a subsidiary, for use as Wayne Industrial Park. The area will accommodate about 20 light industrial or research enterprises.

Parke, Davis Reunion

Two 90-year-olds will be among the 195 former Parke, Davis & Company employees from ten states and Canada, now retired, who will attend the company's ninth annual reunion at the Detroit laboratories. The program will include visits to departments where the retirees formerly worked.

Cassini Cutex Consultant

Oleg Cassini will be fashion consultant for Cutex products, manufactured by the cosmetic division of Chesebrough-Pond's, Inc.

Film Exposes Fraudulent Drugs

The Misery Merchants, produced by the Arthritis and Rheumatism Foundation in cooperation with Glenbrook Laboratories, division of Sterling Drug, Inc., exposes fraudulent devices and drugs offered to arthritics by promoters. The film is available for showing to druggists and health and civic groups.

Preston-National Dissolved

Preston-National Drug Company, Inc., has been dissolved and reincorporated as Preston Drug, Inc., a division of Vitamix Pharmaceuticals, Inc.

White King In Drugs

White King, Inc., has begun diversification into the proprietary drug and cosmetic industry with a two-step overindulgence pill and an aerosol spray alcohol rub.

New Locations

Allied Chemical's General Chemical Division has moved its technical service laboratory from Edgewater, N. J. to the company's Morristown, N. J. research center. Telephone: JEfferson 8-8000 . . . **Ayerst Laboratories,** division of American Home Products Corporation, has relocated its executive offices to 685 Third Avenue, New York City 17. Telephone: YUkon 6-1000. . . . **Fleetwood Overseas, Inc.,** has moved to expanded space at 360 North Michigan Avenue, Chicago, Ill. . . . **Modern American Chemical Corporation** has moved its plant and general office facilities to 1116 Hawn Avenue, Freestate Industrial Park, Shreveport, Louisiana.

Association News . . .

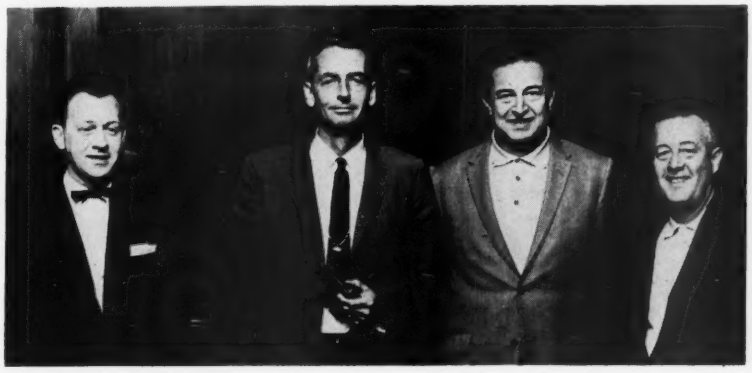
PMMI Elects

The Packaging Machinery Manufacturers Institute has elected new officers and directors to take office on January 1, 1962. William R. Huguenin, division manager, packaging machinery division, Food Machinery Corporation has been elected president; Harold Mosedale, Jr., vice-president, sales, Package Machinery Company, first vice-president; Henry Brezinski, president, Roto Bag Machine Corporation, second vice-president; Eugene Lakso, president, The Lakso Company, Inc., third vice-president; Russell L. Sears, executive director, secretary and treasurer. Mr. Lasko also will serve as chairman of the association's 1963 PMMI Show in Atlantic City. New directors are: Ira Gottscho, president, Adolph Gottscho, Inc.; Boyd H. Redner, Sr., president, Battle Creek Packaging Machines, Inc.; and James C. Hart, president, Clark-Aiken Company. W. W. Anthony, vice-president and executive general manager of Crompton and Knowles Packaging Corporation, was re-elected to the board.

Industry's View

Francis C. Brown, president of Schering Corporation, speaking to the annual convention of the National Association of Retail Druggists, stated that enactment of the

PMMI Officers (left to right): 3rd vice-president, show chairman, Eugene Lakso; president, William R. Huguenin; 2nd vice-president, Henry Brezinski; retiring 1961 president, K. B. Hollidge.



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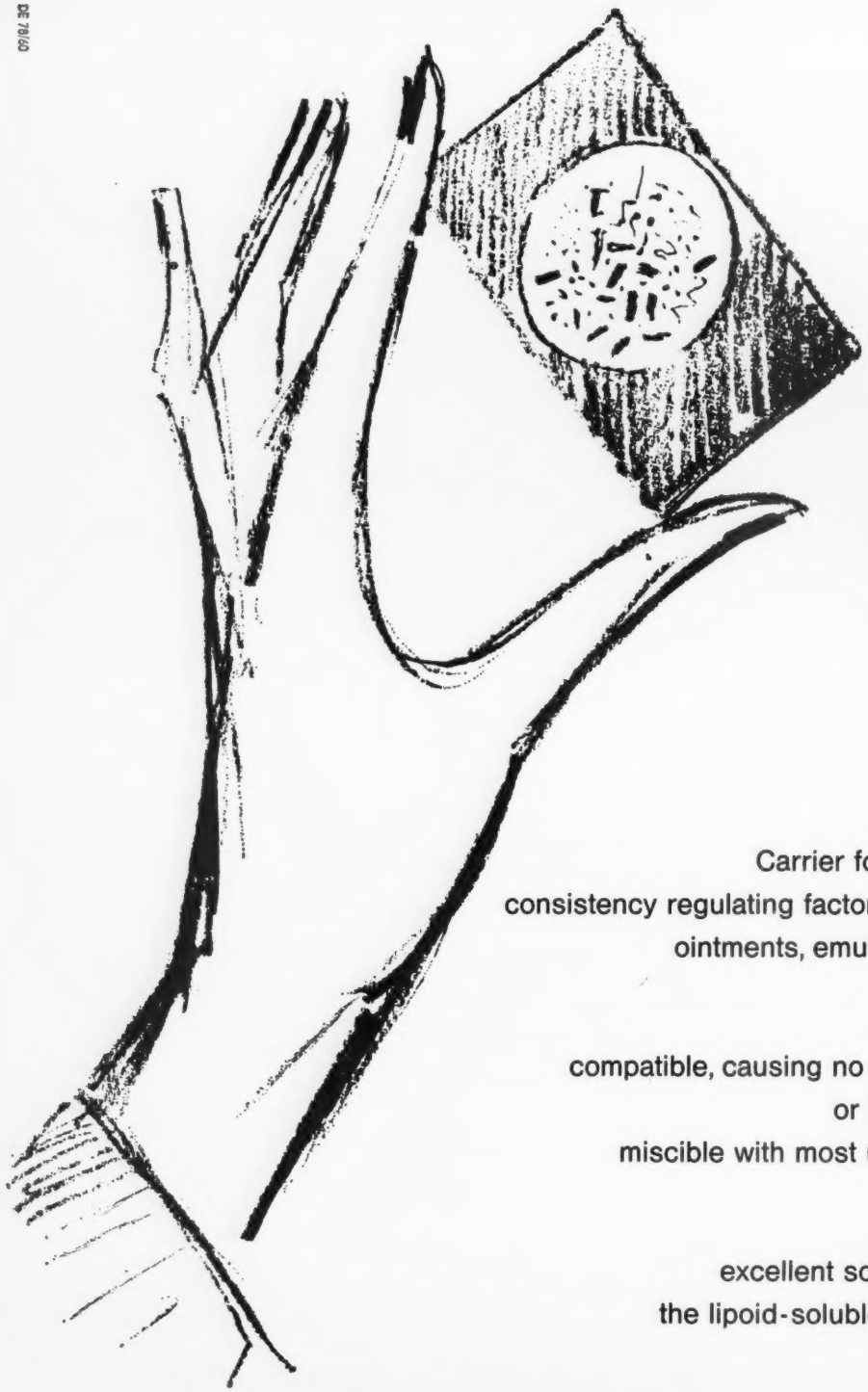

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Kefauver-Celler bill would reduce the amount of new prescription activity in the nation's pharmacies. In addition, the bill's provision to cut drug patents from 17 years to three years would reduce private industry's research efforts and slow the rate of new product development.

Goss Speaks To PAC

Members of the Pharmaceutical Advertising Club were warned to watch out for a forthcoming assault on drug advertising from the Senate antitrust and monopoly subcommittee, by Bert C. Goss, president of Hill & Knowlton, Inc. Mr. Goss, speaking at the club's recent luncheon meeting, stated that Senator Kefauver, chairman of the committee, will put the worst possible meaning on information gathered from the hearings.

Booth Elected

Helen L. Booth, secretary of the Drug, Chemical and Allied Trades Association, Inc., was elected to the newly created office of executive vice-president. Miss Booth, who last

HELEN L. BOOTH

month completed 33 years with DCAT, was elected, in 1957, to three year terms as director of both the American Society of Association Executives and the New York Society of Association Executives. In 1961 she was re-elected to another three-year term as director of the New York group.

TGA Elects Directors

At the recent meeting of The Toilet Goods Association, Inc., Paul D. Blackman, president, House of Fragrance, Inc., and Franklin G. Meeker, executive vice-president, The Andrew Jergens Company, were elected to the board of directors.

Sachs To Head Campaign

Burton A. Sachs, merchandise manager of Bloomingdale's, has been named chairman of the cosmetics and drugs industry's 1961 campaign on behalf of the Federation of Jewish Philanthropies.

Canadian Meeting

At the annual general meeting of The Canadian Foundation for the Advancement of Pharmacy, five new members were elected to the board of directors. In addition, $5,750 in grants and awards was presented.

Shown at the Cosmetic Career Women's luncheon, at the Waldorf-Astoria Hotel, New York, on September 26th, are (left to right): Kay Colton, Dan Wynn, Annette Green, Howard Ketchum, Ruth Drake, and Lester Gaba. The discussion was centered on "the Challenge of Color."

EOA Scientific Section Awards and Scholarships

The scientific section of the Essential Oil Association, at a recent meeting decided to present awards to deserving and conscientious chemists for their work in keeping pace with the progress of the aromatic chemicals and essential oil industry and the advances in manufacturing techniques. Scrolls are to be awarded to those active in committee deliberation for a continuing period of five years or more. George V. Branigan, vice-president, Ungerer & Company, Inc.; Frank L. Boyd, Fritzsche Brothers, Inc.; Eric Bruell, secretary, Polarome Manufacturing Company, Inc.; A. S. Dubenchiek, director, Essential Oil Laboratories, Felton Chemical Company, Inc.; Robert J. Eiserle, Fritzsche Brothers, Inc.; Edward C. Fearns, manager, analytical department, International Flavors & Fragrances, Inc.; A. T. Fiore, manager, market development department, Givaudan-Delawanna, Inc.; Frank R. Forrester, senior chemist, Hoffman-La Roche, Inc.; Charles H. Grimm, International Flavors & Fragrances, Inc.; Louis Hediger, charge-odor control, Trubek Laboratories; Gosta Hedstrom, director, analytical control, Magnus, Mabee & Reynard, Inc.; J. Daniel Johnston, chief analytical chemist, Givaudan-Delawanna, Inc.; E. E. Langenau, vice-president, Fritzsche Brothers, Inc.; Herbert M. Schwarz, chief chemist, Norda Essential Oil & Chemical Company; and A. Warren, Dodge & Olcott, Inc., will receive awards.

The Scholarship Fund Committee of the Association selected Colgate University as the recipient of the first $1,000 per annum E. O. A. scholarship for 1961-1962. It will be given to qualifying students during their junior-senior year.

(Continued on page 318)

A recent meeting of the scientific section of the Essential Oil Association.

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- Complete engineering service including information on the storage and handling of all UCON power propellants.
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POWER PROPELLANTS

JDA Awards

Michael M. Katz, vice-president and general merchandise manager of United Whelan Corporation and Wilbur E. Dewell, of Wilbur E. Dewell Associates, were honored at a dinner given by the Drugs and Cosmetics Division of the Joint Defense Appeal, for their work in behalf of human rights.

Merrell Awards

Judges for the 1962 Lunsford Pharmacy Awards, sponsored by the Wm. S. Merrell Company, have been announced by Nelson M. Gampfer, chairman of the awards. A panel of distinguished leaders in pharmacy will judge essays submitted by students of U.S., Puerto Rican and Canadian pharmacy schools. In 1961, a total of $10,000 in Awards was distributed to students and schools of pharmacy.

Cope Elected

James D. Cope, Ohio State Pharmaceutical Association executive secretary, is now secretary and staff

JAMES D. COPE

executive of The Proprietary Association. Mr. Cope succeeds James H. Merritt, who was elected executive vice-president of the National Association of Chain Drug Stores.

N.Y. Board of Trade Honors Hiebert

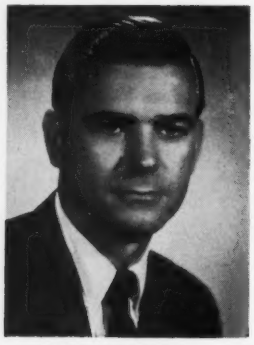
The New York Board of Trade Business Speaks Gold Awards Dinner presented an award to Dr. J. Mark Hiebert, chairman and president of Sterling Drug, Inc. The Drug, Chemical and Allied Trades Association, Inc., held a dinner for Dr. Hiebert prior to the presentation.

ISI Receives Grant

A $300,000 grant extending over a three-year period has been awarded to the Institute for Scientific Information to study the practicability of citation indexes and to test their techniques of preparation. The project, under joint sponsorship of the National Institutes of Health and the National Science Foundation, is aimed at producing a unified citation index for science and the publication of a genetics index.

Appointments and Promotions. . .

Paul P. Woolard, formerly executive vice-president, has been elected president of Prince Matchabelli, Inc., a subsidiary of Chesebrough-Pond's, Inc. Mr. Woolard joined the company as a salesman in 1950 and was promoted to executive vice-president and named a director of the subsidiary in December, 1960. **Bruce Crawford,** formerly with Ted Bates & Company, has been appointed advertising manager of Chese-

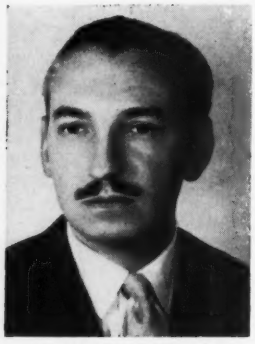


PAUL P. WOOLARD

brough-Pond's. **Thomas F. Muenzen** is manager of the Clinton plant and **George E. Laursen** is production manager.

Dr. Kurt Hansen has been elected chairman of the board of directors of Farbenfabriken Bayer, A.G., succeeding **Ulrich Haberland** who died in September. Dr. Hansen has been on the board of directors since 1957 and served as adviser to the government of India on the development of its chemical industry.

Dr. Alexander Zaffaroni, executive vice-president of Syntex Corporation, has been appointed president of Syntex Laboratories, Inc. Dr. Zaffaroni will continue as executive

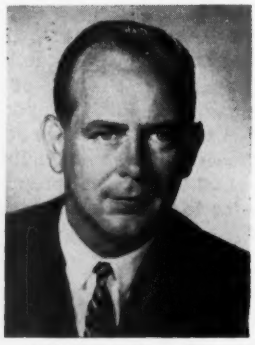


ALEXANDER ZAFFARONI

vice-president of both Syntex Corporation and its Mexican subsidiary, Syntex, S. A.

New corporate officers of Rowell Laboratories, Inc., are **T. H. Rowell, Sr.,** chairman of the board and chief executive officer; **T. H. Rowell, Jr.,** president **B. A. Johnson,** executive vice-president; **T. E. Dinndorf,** vice-president of manufacturing; **Dr. B. E. Greenwell,** vice-president of research; **C. E. Pepera,** vice-president of field sales; and **R. J. Clary,** vice-president of sales promotion.

Heyden Newport Chemical Corporation has appointed **William J. Houston** as executive vice-president and **Dr. H. W. Schultze** as technical



WILLIAM J. HOUSTON

director, of the Nuodex Products Division. Mr. Houston joined Nuodex in 1946 and Dr. Schultze in 1960. **Arthur Minich,** formerly president of Nuodex Products, is now president of the Heyden Chemical Division succeeding **R. M. Aude,** who died in August.

Organon, Inc., has appointed **Joseph D. Cuono, M.D.,** director of professional services. Dr. Cuono has specialized in the treatment of chest

JOSEPH D. CUONO

disease and was director of the surgical department of the Essex Country Chest Hospital in New Jersey.

The Warner-Lambert Research Institute has appointed **Dr. Charles H. Tilford,** formerly head of the Organic Research Department at Wm. S. Merrell Company, as director of chemical research.

Richard G. Henninger, a director, has been elected treasurer of Hazleton Laboratories, Inc., to fill the position left vacant by the resignation of **Francis E. Miller.**

Dr. J. Ralph Fowler, formerly a general practitioner in Wisconsin, is now associate medical director of

J. RALPH FOWLER

J. B. Roerig and Company, a pharmaceutical division of Chas. Pfizer & Company, Inc.

Dr. Charles S. Brown, a vice-president and a director of Abbott Laboratories, Ltd., is now vice-president, U.S. and Canadian operations for Abbott Laboratories. **Paul Gerden,** a director of Abbott Laboratories, Ltd., is now vice-president, administration, and **Fred J. Kirchmeyer,** a vice-president, is now vice-president, product planning and development. **Edward G. Beyer,** who started with Abbott in 1940 as a systems and procedures analysts, has been elected controller of the company, and **Thomas H. Riggs,** scientific advisor to the Federal Trade Commission, has been appointed to the newly created post of liaison chief, scientific relations in the control division.

Stepan Chemical Company has appointed **Edward A. Knaggs** director of research for the industrial chemicals division. Mr. Knaggs, formerly associate technical director, was

EDWARD A. KNAGGS

chief chemist for Ninol Laboratories, Inc., before joining Stepan in 1957 when the two companies merged.

The board of directors of the Allen B. Wrisley Company, a wholly owned subsidiary of Purex Corporation, Ltd., have elected **James A. Barnett** to succeed **Eugene F. Bertrand,** who resigned, as president. Mr. Barnett, a member of the board of directors of Purex for the past four years, was vice-president of Purex. **Paul W. Skillman,** general sales manager of the Allen B. Wrisley Company, is now vice-president and director of marketing for the company.

Johnson & Johnson has appointed **David R. Clare** as vice-president of manufacturing and a member of the management board, succeeding **Claude V. Swank,** who is now a member of the executive committee of the board of directors.

Stanley H. Anonsen has been appointed assistant to the president of Mallinckrodt Chemical Works. **W. J. Shelley** succeeds Mr. Aronsen as

STANLEY H. ANONSEN

manager of the uranium division at Weldon Spring, Missouri. **J. H. Yeager** is assistant manager and technical director of the plant.

Edward Gelsthorpe, formerly vice-president and director of marketing for Bristol-Meyers, Inc., is now vice-president and sales manager of the toilet goods division of Colgate-Palmolive Company. **David Meuse,** district manager of the Minneapolis toilet articles sales district is western region sales manager and **John McKee,** district manager of the Denver toilet articles sales district, is eastern region sales manager.

Malmstrom Chemical Corporation has appointed **Stephen G. Hoch** as

STEPHEN G. HACH

director of its products application laboratory. Mr. Hoch, with Revlon laboratories for the past four years, will do research on the development and application of lanolin products.

James Kuse, formerly a technical sales representative for the silicones

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division of Union Carbide Corporation, is now director of market development for the Hodag Chemical Corporation.

JAMES KUSE

Kenneth F. Browning, formerly with Quaker Oats Company, is now general product manager of Colgate-Palmolive Company's household products division and **William T. Eldridge,** formerly associate general product manager, new products, has been promoted manager. **Robert J. Clark** and **Ellsworth L. Timberman** are new group product managers.

Eli Lilly and Company has appointed **J. Warren Eastes** as manager of the product addition coordination department. He succeeds **Kenneth L. Hartman** who has retired. Mr. Eastes joined the firm as a plant layout engineer and has been a member of the product addition studies division since 1954.

John I. Snyder, Jr., vice-chairman of the board, succeeds **Thomas A. Morgan,** who has retired, as chairman of the board and chief executive officer of General Aniline & Film Corporation. Mr. Snyder is president and chairman of the board of U.S. Industries, Inc., and a director of American Research and Development Corporation, Cory Corporation, Vickers-Armstrongs, Inc., Commerce Oil Refining Corporation, Medical & Science Communications Development Corporation, Medical Tribune and Metro-Goldwyn-Mayer, Inc. **Ross D. Siragusa,** president and chairman of the board of Admiral Corporation, is vice-chairman.

Bristol Laboratories has appointed **Lorne MacBeth,** formerly with G. D. Searle and Company, as general sales manager.

The board of directors of The Dow Chemical Company was re-elected at the 64th annual meeting of stockholders, and all incumbent officers were reelected by the board. **Earle B. Barnes,** general manager of Dow's Texas Division, has been appointed as an assistant secretary. **Dr. J. Eichhorn,** division leader in the physical research laboratory, is now special projects manager for the plasticides department. **Bruce B. Wilmarth,** formerly assigned to the pharmaceutical section of the company's organic chemicals sales department, is now a field salesman in the New York office.

Retirements

Arthur L. Perry, assistant treasurer of Hercules Powder Company since 1946, has retired. Mr. Perry joined Hercules in 1942 as a corporation tax consultant and technical assistant in the treasurer's department. He was elected assistant treasurer in 1946.

Thomas J. Wood, a vice-president and director of Procter & Gamble Company, has retired after 42 years of service. Mr. Wood was vice-president of sales from 1943 until February when he directed special projects.

Obituaries

F. L. McCartney

Frank Leslie McCartney died recently at the age of 80. He first worked for Hynson, Westcott and Company as a prescriptionist and then with Sharp & Dohme Pharmaceutical Manufacturers. Mr. McCartney was elected president of The Norwich Pharmacal Company in 1938 and served in that capacity until his retirement in 1946.

J. Masbach

Jean Masbach, board member of Brockway Glass Company, Inc., and head of Brockway's New York sales office, died recently. Mr. Masbach joined Brockway in 1927 as a salesman in the Baltimore office and took over management of the New York sales office in 1928.

E. Warburton

Piers Grove Eliot Warburton, former chairman of William R. Warner, Ltd., British subsidiary of Warner-Lambert Pharmaceutical Company, died recently in London. From 1925 until 1939, Mr. Warburton was European manager of the Vick Chemical Company and later joined American Home Products International as vice-president. In 1945 he joined Warner, Ltd., and until 1959 was managing director of the firm.

D. W. Cook

D. W. Cook, vice-president, management advisor to The S. E. Massengill Company since his retirement in 1959, died recently in New Jersey. Mr. Cook began his career with the company in 1921 as a salesman in West Virginia, and served as vice-president and division manager of the company's New York division from 1940 until he retired in 1959.

W. H. Hartung

Dr. Walter H. Hartung, professor of pharmaceutical chemistry and chairman of the department of chemistry and pharmaceutical chemistry at the Medical College of Virginia, died recently in Richmond, Virginia. Dr. Hartung was nationally known for his work in synthetic medicinal chemistry and the correlation of chemical structures with physiological activity.

A. H. Neuschaefer

Helen Ahrens Neuschaefer, president of Helen Neuschaefer, Inc., died recently at her home in Rye, New York. Mrs. Neuschaefer was the widow of Franz L. Neuschaefer, who was president of A. Sartorius & Company. Mrs. Neuschaefer, a former executive vice-president of the Belock Instrument Corporation, had received several awards for good business administration.

Erratum

In *Geranium Oil Price Declines,* DCI August, page 172, two pictures were captioned to indicate that they were taken in France. Actually, they illustrated a geranium plantation at Hakatajima, owned by Soda Aromatic Company, Ltd.

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Management Forum

BY FRANCIS CHILSON, Sc.D.
PROFESSIONAL ENGINEER

The Body Snatchers

Three score and ten years ago, when the medical schools needed a body to dissect, they used to buy it from grave robbers, who were avid readers of the obituary notices. "Body Snatchers," they used to be called, these ghouls who worked under the cover of darkness. No longer do these gentlemen prowl the highways and byways. But bodies are still being snatched by well-educated gentlemen, who also prowl the highways and byways and work under cover; sometimes in darkness as well.

These modern Body Snatchers, however, are not after dead bodies; they are after live ones. I refer to that growing group of management engineers (engineers so-called) and placement specialists who are employed to pirate high-priced executives with baits of bigger salaries, stock options and other emoluments. I get letters from such operators frequently, outlining the qualities, experience and education of the men they are after.

For years, like the fat-head I am, I didn't realize that these operators were getting fees for their services—usually a year's salary of an approved candidate—because I have always supplied staff for my regular clients for nothing as an adjunct to my general services. Sometimes the fees of the Body Snatchers range from fifteen to more than $100,000.00. As a matter of fact, I was directly responsible for picking a company president who got a hundred grand. I got nothing; not even "thanks." But I'm wiser now.

Now that I have worked with men who were selected by the Body Snatchers, I strongly suspect that some of the B.Ss have a "stable" and move around their selectees at appropriate intervals to greener pastures—always at a fee of course. This racket is even better than that of the professional industrial psychologists. And to think that I wasted my time in engineering!

Incompetent Doctors

A few months ago, a doctor, presumably a competent one, responding acidly to a previous article of mine on the subject of incompetent diagnosticians, challenged my competence to make any critical comment on the medical profession whatever. Now, one of the members of the doctor's own profession, Dr. Robert S. Myers, executive assistant director of the American College of Surgeons, has been quoted by the New York Times as having stated that about half of the operations performed in this country are performed by *unqualified* doctors. He admitted that the majority of these inept operations were in the category known as minor. "But," he said, "there is no such thing as minor surgery; there are minor surgeons." The distinguished surgeons didn't comment about the other 50 per cent of the operations performed in this country. Presumably they were unnecessary.

Recently the well known columnist, Sydney J. Harris, wrote in his column, "Strictly Personal," an article entitled "Why Too Many People Die of Cancer," I quote it verbatim:

"I had lunch yesterday with a friend from Philadelphia, who happens to be radiation-therapist in one of the nation's leading hospitals. He looked worried and upset.

When I asked him what the trouble seemed to be, he replied that he had just seen a young mother of three, who was dying of cervical cancer. 'And there was absolutely no need for it,' he added. 'With proper treatment, 80 per cent of such cases can be saved.'

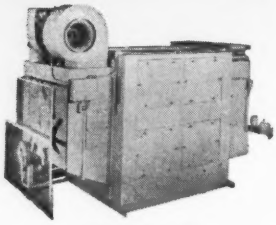
'You mean people should go for cancer checkups more promptly and frequently?' I said, remembering all the warning ads I had seen.

'I mean much more than that,' he answered. 'I mean that something has to be done within the medical profession itself, so that the people who *do* go for checkups are given the right treatment and enough of it.'

'Why aren't they?' I wanted to know.

'Well,' said the doctor, 'it's a combination of

Tableting machines don't clog when workrooms are desert-dry

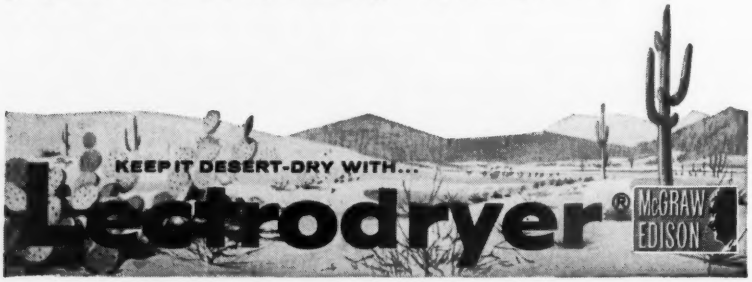


New Type CH Lectrodryer

A CHO Lectrodryer maintains the 15,680 cubic foot area of this tableting room at 20% relative humidity, regardless of conditions out-of-doors. So, when humid weather ordinarily causes hygroscopic powders to gum up and stop flowing, production is maintained here at full speed.

Have you, in the past, considered controlled dryness and found it too costly? It may pay to reopen those files and ask Pittsburgh Lectrodryer for drying recommendations. Dehumidification methods and efficiencies of dryers have been developed so much recently that the cost picture may be completely changed.

DATA SHEETS ARE AVAILABLE which describe typical humidity control installations. They'll serve as guides in planning your own systems. For copies and for other drying help, write Pittsburgh Lectrodryer Division, McGraw-Edison Company, **309** 32nd Street, Pittsburgh 30, Pennsylvania.



ignorance, greed and vanity. Many practitioners don't know how little they know about cancer. We offered a basic course in Malignant Diseases at the hospital, and hardly any doctors showed up—they were either 'too busy' or thought the course was 'too elementary' for them.

'That's the element of ignorance,' he continued. 'Then there's the element of greed. I'm afraid that some doctors don't want to refer their patients for treatment, for fear of losing a fee. Any physician is permitted to buy radium and use it on a patient, whether or not he is skilled and experienced in this therapy. I get many cases of 'too little and too late' because the family doctor wanted to keep the patient for himself.

'The third factor is vanity, which operates just as strongly in a medical man as in anybody else. Even if he isn't greedy, often he will treat a patient on the assumption that he can do as well as any specialist. A doctor who won't admit his limitations is the patient's worst enemy.'

'What can be done about this?' I asked.

'I don't know,' he said. 'That's why I'm so concerned. There's not much point in telling people to get cancer checkups if they don't know where to go for the proper treatment, and if their doctors won't send them. Actually, the poor who go to big clinics usually get better treatment than middle-class patients with family physicians—so it's not primarily an economic problem.

'I would estimate,' he concluded sadly, 'that perhaps eight of the ten young people with certain types of cancer could be cured, but only about four out of ten are cured at present. And if the medical societies won't police themselves more effectively, what good do the cancer warnings do?' "

Weighing Survey

A new survey among many of the nation's top weights and measures officials has revealed a list of "Seven Deadly Sins" against weighing accuracy, according to the Scale Manufacturers Association. Conservative estimates put the cost of such "Seven Deadly Sins" at hundreds of millions of dollars annually. Furthermore, they involve all of American business and industry: manufacturers, shippers, processors and retailers, a cross-section of top weights and measures officials indicates.

Here are the most frequent causes of weighing mistakes as compiled from the survey, "New Trends in Weights and Measures," made by the Scale Manufacturers Association.

1. *Neglect and Maltreatment.* Abuse and neglect of scales were cited by almost all of the weights and measures officials replying to the survey (which includes the top weights and measures officials of 25 states and cities).

2. *Improper Scale for Weighing Job.* Incorrect weights can result purely from using the wrong scale for a weighing job. Frequently scale users will weigh relatively small loads on large capacity scales—for example, to weigh less than 1,000 pounds on a 30,000 pound or larger vehicle scale is unsatisfactory and prohibited in most states, simply because the large components are not tuned for small load sensitivity. Some good scale people say a scale should never be used to weigh a load of less than five per cent of the scale's full capacity. On the other hand, it is certainly a very bad practice to try to use a scale to weigh a load of more than the scale's capacity, but some people do. In addition to bad weight readings, such a practice can do serious and permanent damage to the scale.

3. *Improper Installation.* Many large capacity scales must be assembled at the site, and the very best scale—perfectly correct at the factory—will not function satisfactorily unless installed properly. The supervision of the pit, foundations, walls and approaches preparation and the installation of the scale parts should be by scale people, experienced as to the particular type of scale. Improper installations are a major headache for the scale owner.

4. *Lack of Level and Sturdy Supports for Small Scales.* It was found in the survey that owners and operators very frequently do not provide the foundation or support of small portable scales to insure adequate strength, rigidity and performance—to avoid out-of-level weighing. This can be deadly as it guarantees bad weights, except for a few types designed to operate satisfactorily in out-of-level condition.

5. *Infrequent Testing, or Lack of Testing.* Almost all top official sealers of scales found one of the chief causes of weighing errors to be lack of knowledge of whether the scale is right or wrong—due to infrequent testing or no testing at all. Everyone agreed that scales do go bad from use and abuse and should be tested, not only by weights and measures officials, but frequently by the owner or operator and by local service agencies.

6. *Lack of Proper Maintenance.* This was the most extensively endorsed cause of scale errors, said the weights and measures executives. Although the scale owner fully appreciates the necessity of good car and truck maintenance, too frequently, the sealers said, he thinks if the new scale starts off right, after proper installation, it will continue to be right. It should be tested, cleaned and properly serviced by experienced scale mechanics on a regular basis.

7. *Carelessness and Poorly Trained Operators.* This was very high among the most frequently cited causes of weight errors.

In the drug industry we found out years ago that formula weighing was too dangerous to be carried out on a hap hazard basis by dumb clucks. So we established weighing rooms operated by qualified people; very often graduate pharmacists.

Producing Protein

Some time ago, as reported in this column, a process was invented in England for the conversion

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Up to 5/8" diameter tablets at 3800 TPM

Here's the press that's designed to take larger tablets and deeper fills at high speed in perfect stride. The new Stokes Model 541 4-ton press produces tablets up to 5/8" diameter with depths of fill from 1/8" to 11/16". Production speeds for this 41 station press range as high as *3800 tablets per minute.*

This versatile press offers all the operating features needed for uniform high-quality production of a wide variety of tablet sizes and shapes. New dual-pressure distribution system ensures uniform compacting at high production speeds. Simple press adjustments permit the production of thin wafers, intricate shapes, and other special tablets.

The Model 541 press is typical of the many new designs initiated by Stokes to meet the ever-changing needs of the pharmaceutical industry. For more than 60 years, Stokes has been anticipating these needs . . . *and filling them* . . . with quality equipment of proven performance. Today, many leading manufacturers rely on Stokes' tabletting experience and laboratory facilities in the development of optimum tablet sizes, weights, and formulations for efficient, high-speed production.

Get a head start on production by investing in a *new* Stokes press. For complete technical data on the Model 541 and other high-speed presses, contact the Stokes representative nearest you. Be sure to ask about the *new Force-Flo Feeder* option which makes it possible to go from dry-blended powder to finished tablets in a single operation.

Pharmaceutical Equipment Division **STOKES**

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of vegetable matter into edible protein. As a means of feeding protein starved countries, this process has much to commend it, since virtually any kind of grass or other vegetable matter can be used.

I wonder why someone hasn't continued on a mass scale the work of the late Dr. Alexis Carrell. You will recall while he was at the Rockefeller Institute he kept a bit of chicken heart alive and growing for many years. It grew so rapidly in fact that it had to be pared down very frequently. I once read an article many years ago by Dr. Carrell in which he estimated the size of the chicken heart in X years if permitted to grow unchecked. It was enormous. So here's an idea for you bacteriologists, biochemists and biologists to get going on. It should take you only a few months of research. After all Carrell did most of your work for you!

Psychonomy

This new word should stir your risibilities. Like "automation" this word, once it gets going, is bound to become a household word. It was originated by Priscilla Alden Beach, Buck Hill Falls, Pa., to describe a method of personality evaluation which begins where other tests leave off. Mrs. Beach and her late husband developed this method, she told me, because it was obvious to them that personality evaluation was industry's most important unsolved problem particularly in evaluating men for top executive posts. The defect of the tests ordinarily used is that, while they may indicate individual capacities in various areas, they do not guage total personality. This really is the most important test of all because it has been estimated that as high as 80 per cent of the failures in administrative jobs are due to personality failures rather than to technical incompetence or lack of experience. Mrs. Beach conducts seminars for upper eschelon executives in which the principles and practice of psychonomy are explained and applied.

There'll Always be an England

When I was in England recently I read in the paper that some learned philologist proposes to supplant the present English alphabet with one containing twice as many letters. That's typically English. For a dozen centuries our English cousins have been doing their damndest to get rid of most of the letters in the present alphabet. Now along comes a bloke advocating more letters to be got rid of. As you know the English use letters when spelling words and ignore them completely when pronouncing the words. "Southwark" for example is not pronounced the way it is spelled; it is pronounced "Suthick." "Chiswick" may be the place you are looking for, but all you'll get is a blank stare if you ask for it the way it is spelled. If, however, you ask for "Chisick" everything will be as right as rain. The English language as it is spoken in England contains a lot of words the spelling of which has nothing in common with their pronunciation. In pronouncing words our tendency is to elaborate, the English to abbreviate. But if we stick with it we shall, in a couple of centuries, be able to teach the English how to speak their own language!

Producing With Obsolete Equipment

According to D. Walter Heller, chairman of President Kennedy's Council of Economic Advisors, the investment of American business in new plant and equipment has been declining steadily since 1948 in comparison with Germany, Japan and Russia. The Council estimates that two thirds of our production equipment is now obsolete. Secretary Goldberg was quoted by the *New York Times* as saying that it would require 95 billion dollars to replace equipment now obsolete.

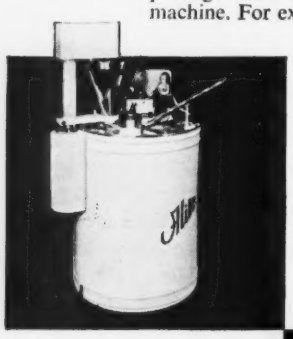
While I am always suspicious of figures quoted by government officials and politicians, I am prepared to say, regardless of the condition of the equipment contained in them, our factory buildings are largely obsolete. One does not have to go through the majority of factories to discover this. That can be determined by a casual glance as one drives past them. Our production is largely being done in factories that are of the wrong type and in the wrong places. Many of them, from the point of view of flexibility, expandability and material handling, are hopelessly inefficient. This is particularly true of the pharmaceutical and cosmetic industries. In the main our factories are deplorable.

Why are they so? Because they were designed by inside engineers and production people without competent, experienced outside guidance. And by this I don't mean architectural guidance. Inside people are limited by their own experience. Usually that experience is limited to one plant or at best, two or three. They can see their problem from the point of view of their own particular business; never from the standpoint of the entire industry in which they are operating. When they design a new plant they seek to overcome the deficiencies of the old one. Often they do a very good job as far as it goes. But their vision is limited by the products they are making at the time new construction is undertaken. They fail to realize that in five years the products they will be called upon to make may be entirely different from the original ones. Their conceptions and imagination are limited by present products and present methods with a guesstimate as to future expansion requirements.

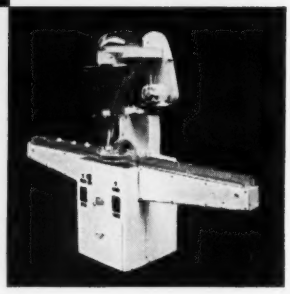
They also are limited by existing company policies; existing company politics; budgets and higher authority. Invariably Mr. Big will gum up the works by demanding that certain changes in layout or structure be made and no inside man will dare oppose him. Not if he wants to keep his job! I have seen a lot of ruined layouts that were caused by the interference of the big shots. Sometimes the Boss Man will gum up the works even more by hiring a screw-ball archi-

...One of the few "containers" an **ALITE** machine doesn't fill!

But keep in mind: *"If it's pasty, powdery and pours, there's an Alite to do the pouring."* Drugs in 8-milligram vials . . . mustard in 3-pound tins . . . make-up in compacts . . . flour in 2-pound bags . . . you can put virtually any-type product into any-type package with a specially designed Alite machine. For example:



Fills up to 1200 powder compacts per hour. Arenco-Alite A. T. 5 powder-compressor is fully automatic, dispenses any powder concentration evenly, accurately. Pressure completely variable from 40 to 1000 psi with merely the turn of a knob. Handles any-size compact from 1"-4", requires no air supply or other "extras."



16, 32 or 48 fills per minute. Alite loose-filling machine speeds dispensing of powders, grain substances, even pastes, with an economical accessory. Fills containers as small as ¼ oz., as large as 3-pounds-plus. Hopper and working parts can be stripped, cleaned and reassembled in minutes.

And these are only two members of the Alite family of powder-filling, -compressing and batch-mixing equipment. For complete information, write today.

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tect or the wrong building engineers and contractors.

A factory can be an efficient flexible tool, easily expandable and easy to operate. It can be designed to accomodate product changes and volume increases without disturbance or loss of output. But it has to be designed correctly at the beginning. Next month I shall tell you the story of a factory that was designed right, which in four years has multiplied its tonnage five fold and its product mix to a very radical extent. But in accomodating this increase in volume and this complex change in product mix not a brick was added to the original building and the increase in capacity and variety was accomplished with no loss of production time.

Computers

At a subcommittee meeting on automation recently, Congressman Elmer J. Holland (Dem. Penna.) exclaimed, "These computers scare me. They will do away with Congress!"

That's too much to hope for!

Colloid Mill

A colloid mill, capable of working with a minimum of material, can refine slurries as small as 25 to 75 ml., and has a specially designed, variable speed 22,000 rpm rotor and stator with adjustable clearances between them. It can be used to fragment

bacterial cells for enzyme investigation, prepare highly refined emulsions for allergy studies or make pigment dispersions of high color intensity. *Gifford-Wood Company, Hudson, N. Y.*

Label Dispenser

Pressure-sensitive roll label dispenser PS-100, feeds a roll of pressure sensitive labels, peels the labels from the backing strip and, by means of a special belt, delivers the labels ready for application. *Lakso Company, Inc., Fitchburg, Mass.*

Centrifugal Impact Mill

A stainless-steel Centrifugal Impact Mill, which provides contamination-free processing and furnishes approximately twice the energy of earlier models is particularly applicable for chemical, pharmaceutical, and food applications where cleanliness and corrosion resistance are important. *Entoleter, Inc., New Haven, Conn.*

Packaging Machine

A new high-speed, universal contour packaging machine will overwrap up to 2000 units per hour with shrinkable film. *Versapak Film and Packaging Machinery Corporation, 928 Broadway, New York City 10.*

Monitor

Airborne particle monitor is automatically and selectively programmable, and when combined with a gas dilution system, provides a digital readout of the particle size and content of atmospheres ranging from that of the cleanest room to the most highly contaminated area. *Royco Instruments, Inc., 440 Olive Street, Palo Alto, Calif.*

Aerosol Spray Tip Applicator

A new automatic aerosol spray tip applicator that applies buttons to aerosol valves at a rate of 160 per minute, eliminates from four to five people on the production line. It handles all popular valve spray tips and adjusts for aerosol cans from 202 by 314 to large 300 diameter, 24-oz. cans. *Haumiller Engineering Company, Elgin, Ill.*

Glass-Blowing Machine

Paste mold automatic glass-blowing machine is three-stories high, the largest of its type in the world, and produces beakers, erlenmeyer flasks and petri dishes in a variety of sizes and of consistently high quality. *Kimble Glass Company, Vineland N. J.*

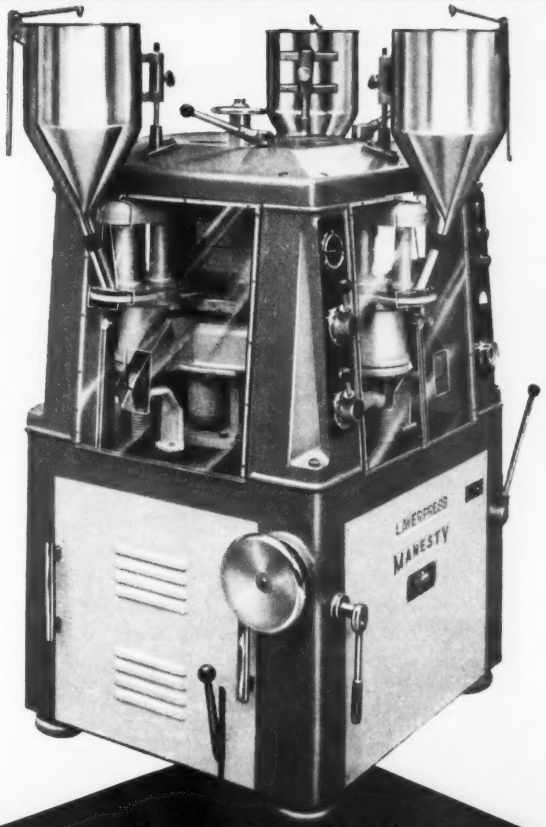
New Coupling

New CIP-approved coupling is low in first cost, designed for minimum installation expense, and can be used with metal and plastic pipe, tubing and fittings. It provides unrestricted flow, is a union in itself and puts only a gasket of approved material in contact with the fluid flowing through the coupling. *Valve & Fitting Division, Cooper Alloy Corporation, Hillside, N. J.*

Steel Floor Plate

New abrasive rolled-steel floor plate has abrasive grain rolled as an integral part of its top. Tack-welded in the new Lambert-Hudnut Manufacturing Laboratory, it provides a strong floor with a non-skid surface. *Alan Wood Steel Company.*

A PHARMACEUTICAL FIRST!



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On the KIEFER Pressure-Vacuum Filler, the vacuum requirement is definitely reduced, as it is compensated by pressure on the product delivery. Increased speed of 60% to 70% is realized—due to the "pressure assist" and the lack of air entrainment or foam.

KIEFER "Pin-Point" Submerged Filling Stems also available on all sizes of KIEFER Rotary Filling Machines. They are the MIRACLE PERFORMERS on all plastics including gallons, too.
WITHOUT use of SEALS.

"PIN-POINT"

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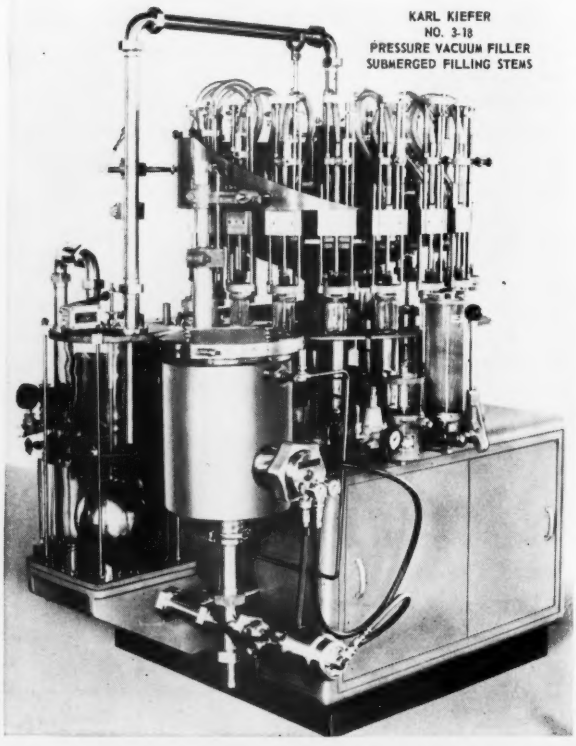
Showing the KARL KIEFER "PIN-POINT" filling stem assembly with SUBMERGING ATTACHMENT



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Hydrocarbon Aerosol Filling Line

A new "outdoor" hydrocarbon aerosol filling line is in operation at Stalfort & Sons' Pressure-Pak plant.

Except for conveyors, which carry filled, vacuum-purged and crimped containers from the main plant to the new filling room and back, and its 15-head rotary gasser, the entire hydrocarbon operation is outside the plant. It consists of the filling room, a new steam power plant and, at some distance, a storage area for the dangerous gas. As part of the safety equipment, mine safety appliance monitoring instruments have been installed. *John C. Stalfort & Sons Company, Inc., 319 W. Baltimore St., Baltimore, Md.*

Minisealer

Minisealer package sealing machines come in several new models. These machines will glue the ends of many types of cartons, after they are filled, at an average sealing rate of 1200 to 1500 per hour. Machine speed is 20 cycles per minute. Requiring four square feet of floor space, they are of stainless steel construction, and are run completely on air pressure. *Alford Package Machines, Inc., Ridgefield Park, N. J.*

Polyethylene Tanks

New line of polyethylene tanks, equipped with spigots, hold and dispense almost any liquid, except hydrocarbons. In 20, 32, and 55 gallon sizes, the new drums are equipped with either ¾- or 2-inch spigots. Either rigid or conventional polyethylene tanks are available. Levels are easily gauged through the translucent side walls. *Redmanson Corporation, 630 Loucks Mill Road, York, Pa.*

Continuous-motion Labeler

SL-85 automatic, straight-line continuous-motion labeler, a compact version of the larger CM Labeler, handles labels from postage stamp size to 6 by 7 inches. *MRM Company, Inc., 191 Berry Street, Brooklyn, N. Y.*

Rotary Blister Sealer

A low-cost model of the high-production four-station rotary blister package sealer is to be used where fewer loading operations per package are required. *Tronomatic Machine Manufacturing Corporation, 25 Bruckner Blvd., Bronx 54, N. Y.*

Precision Uniform Flow Pump

A new pump designed to produce uniform flow and permit precise control has a range of from 30 to 500 cc. per minute, is continuously adjustable over the entire range, can be set precisely, and comes precalibrated. The output flow is independent of back pressure. Hold up is less than 40 cc. *Sage Instruments, Inc., 9 Bank Street, White Plain, N. Y.*

Rotex Screeners

New line of sanitary Rotex Screeners for processing pharmaceuticals and food products uses a new method for applying screen cloth that allows rapid attachment or removal of the cloth for fast, easy cleaning, and constant screen tensioning for longer screen wear and greater screening efficiency. *Orville Simpson Company, 1230 Knowlton Street, Cincinnati 23, Ohio.*

Packaging System

Cluster-Wrap packaging system, a fully automatic method of multiple packaging, operates as a continuous-motion-paced packaging line, eliminating the separate stations usually required for forming, filling and sealing, as well as labor and hand operations. Only one operator is required.

The system fits directly on the assembly line and can utilize existing conveyors. The use of precision die-cut locks eliminates glues, staples and sealers. Six feet of floor space are required. *Mead Packaging, Box 4417, Atlanta, Ga.*

Aerosol Propellant System

Varisol propellant system effects reduction of product cost by ten per cent and balances various propellant components in conjunction with non-flammable, non-toxic diluents in proper ration to achieve any desired spray pattern. *Aerosol Techniques, Inc., Bridgeport, Conn.*

Temperature Chamber

New temperature chamber is engineered to hold three modules capable of testing 150 component parts simultaneously over a range of minus 100 degrees to plus 350 degrees F. Ten cubic foot stainless steel chamber is especially adapted to nondestructive as well as life-testing of diodes, resistors, capacitors, transistors and other component parts. Custom engineered to accommodate all types of modules. *Cincinnati Sub Zero Products, 3932 Reading Road, Cincinnati 29, Ohio.*

pH Controller

New mobile, self-contained unit has autoclavable electrodes adaptable for microbial fermentations and chemical processes. It regulates, monitors and records *p*H in any active fermentation or chemical process at laboratory, pilot-plant and production levels. *New Brunswick Scientific Company, Inc., 1130 Somerset Street, New Brunswick, N. J.*

Carton Unloader

Automatic Carton Unloader is designed to tilt, open and unload large cartons of dry products. It holds the carton in place, tilts it to a 20 degree angle, punches two openings in the lower side, and then vibrates it so that the dry material flows rapidly. Rate of flow is controlled by a manually adjustable gate. *Vibra Screw Feeders, Inc., 156 Huron Avenue, Clifton, N. J.* •

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THE pH OF THE SKIN

(*Continued from page 585*)

faces in some one hundred subjects, the ages of whom varied between six months and 76 years. The mean *p*H was 4.9, the variation being from 4.2 to 5.6.

It is of historical interest to mention the values found by earlier workers in this field. Sharlit and Sheer,[5] for example, found a mean *p*H of 5.5, while Schade and Marchionini[6] reported that the *p*H varied between 3.0 and 5.0. Levin and Silvers[7] obtained values of from 5.0 to 5.3.

Marchionini[8] has emphasized that the *p*H of the skin surface is of importance as a defense against skin infection, and his "acid mantle" theory has received much attention. However, as Peck and Michelfelder[9] have recently stated, it is not the *p*H itself which is of so great importance, but, rather, the various factors which operated to produce and maintain this *p*H.

In 1939, Peck and his co-workers[10] stated that it was the constituents of sweat which were of importance in protecting the skin surface against bacteria and fungi, and fourteen years later it was shown by Peck, Traub and Spoor[11] that certain of the lower fatty acids, present in sweat, were bacteriostatic and fungistatic, and that these fatty acids acted most effectively at *p*H values below seven. The fatty acids mainly responsible for the fungistatic and bacteriostatic action of sweat appear to be propionic acid, caproic acid and caprylic acid, while the several other fatty acids also present in the sweat contribute to the lowering of the *p*H of the sweat. The *p*H at which the already mentioned fatty acids act optimally as fungistats and bactiostats is well on the acid side. Consequently, sweat which is found to have a *p*H greater than seven would be expected to contain little of these fatty acids or salts of the latter.

The lesson that the cosmetic chemist will learn from all this work on skin *p*H is simple: cosmetic preparations which are designed to remain on skin for long periods of time should not contain excessive amounts of either acid or alkali, since, otherwise, the normal *p*H of the skin surface would be unduly disturbed, with consequent decrease in the efficiency of the protective mechanisms. In this connection, it seems very likely that, in some cases, skin can react unsatisfactorily to such material as, for example, soap, with rapid change in *p*H of the mantle, and consequent skin damage. Blank[12] has emphasized the importance of alkalinity in the production of eczema from such products as soaps.

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OVERSEAS OPERATIONS

(Continued from page 584)

were using, but our experience does not substantiate theirs.

Hard gelatin capsule filling equipment available in Europe has taken two forms. The first, available from at least two manufacturers, is based on the use of auger fillers. I haven't seen too many capsules filled on these units, but it is my impression that they are generally not as compactly filled as capsules handled on the Parke Davis or Lilly machines, giving the impression of slack fill, which is not good, especially when the sales department insists on the use of a transparent capsule.

The second unit, exhibited for the first time at Achema in June 1961, first compacts powder in a tube having about the same interval diameter as the capsule, and then transfers this semi-hard slug to the capsule body. Since this slug can be made slightly longer than the capsule body, you can even compact powder into the hemispherical tip of the cap of the capsule.

This unit is available also directly coupled to a capsule banding unit, which also seems to do a very fine job.

Its capacity is about 100,000 to 120,000 per day and the price is a little on the high side, but it will receive serious consideration from us when we are in the market in the future.

Tablet-making machinery including drying ovens, wet and dry mixers, granulators, coating pans, and both single punch and rotary tablet machines of very fine quality are made in England, Belgium, Germany and Japan, so that here again the final choice will be based in larger measure on factors such as (1) the country in which the machinery is to be used; (2) quality of local service facilities; (3) currency availability; (4) import license restrictions; (5) delivery time quoted, and so on.

The most interesting point I can make concerning rotary tableting machines is the tendency for German manufacturers to run their machines at lower RPM than the American counterparts, but they upgrade output through the use of gang punches. I first saw this in 1953 when I was told that this was being done to increase the useful life of the tools, thereby conserving tool steel which was then in short supply. Whether or not this still holds, I cannot say.

One thing I can tell you concerning the Belgian and German units is that they are built in the traditional European fashion and will probably outlast the pyramids.

Ointment manufacturing and filling equipment available in Europe is generally quite satisfactory. We are using European equipment in all of our European operations, with the filler-closers coming from either Sweden, Italy or Germany. We are also using the Swedish filler-closer in Canada and Brazil and in this country, where we made our original

Multiple, Semi-Automatic Filler

MODEL B-49 STRAIGHTLINE VACUUM FILLER
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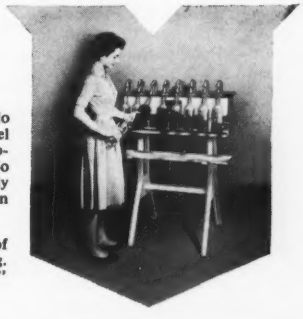
Steady Filling

MODEL B-2 VACUUM FILLER. Fills 2 containers while 2 filled containers are being removed and 2 empties loaded. Thus, filling is continuous. Handles containers up to 4½" dia., up to 13" high. Stainless steel construction. Plastic available. Portable. Filling is fast, efficient. Write for "Bulletin B-2."

For All Liquids All Containers

Also for foamy products that do not permit agitation. Stainless steel filling tubes. Fill controlled automatically. Glass lined tank. No power required. Product supply regulated. Write for "Siphon Bulletin."

Hand Filler. A precision unit of high quality for efficient filling. Write for "Hand Filler Bulletin."



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evaluation of it.

Labeling and cartoning equipment of overseas design and construction is available in superabundance and, as in this country, runs the whole gamut from the hand-fed table model to the fully automatic unit intended to be inserted into your line. Labelers using thermoplastic coated papers are coming more and more into the field, but it is my impression that available papers still leave a bit to be desired, and so this development is not spreading as rapidly as it did in the United States in its early stages here.

Use of automatic cartoning equipment has suffered because of shorter runs due to more limited markets and because available units were generally built to handle one size of package. This latter point is now being rectified and our company is once again looking into the economics of automation in this regard.

There is one type of equipment which I must mention, and that is the units built according to your own design. We have had double cone blenders, sterilizing ovens, syrup tanks, packing tables, bottle trays, and ampule racks, and many other items made up for us by European, Japanese and Australian fabricators, and we have always found their work to be of a high quality. We, of course, carefully selected these suppliers, but the point is that we have always found one, and more often several, who could meet our specifications with ease.

MASKING PHARMACEUTICALS

(*Continued from page 581*)

necessitated by poor taste, can no longer be made. It is far wiser to regard the flavoring phase not as "terminal" to product development, but as running "parallel" with it.

Excessive haste with which manufacturers so often harass the flavorist reduces the likelihood of an acceptable medicine. Perhaps it is forgotten that development of the product took months to accomplish. To allocate only a fraction of that time to flavor development makes little sense.

To ease their burden, flavorists must have access to basic product information including, at least, type of medicine, dosage, age groups, and composition of vehicle. Many manufacturers reveal these data only with reluctance. Withholding them altogether, stymies efforts directed toward product improvement.

Other annoying practices are pre-flavoring and nonsupply. The former is a partial flavoring job, begun unsatisfactorily and then turned over for further work to the flavorist who could do much better if allowed to start from scratch. The latter is the failure to furnish a supply of unflavored material, enough for repeated panel testing which, by its very nature, is wasteful.

The practice of assembling so-called flavor librar-

(*Continued on page 642*)

Patents and Trademarks

BY THOMAS CIFELLI, JR., PATENT ATTORNEY*

Potpourri

Proposals Under Study By New United States Commissioner of Patents. A few miscellaneous items are thought to be of general interest and will be highlighted here. For one thing, the new United States Commissioner of Patents, David L. Ladd, has lost no time in making it clear that he intends to be an active Commissioner and to do something about certain problems which have plagued previous commissioners. In order to try and reverse the trend of the 20 per cent annual turnover of Patent Examiners, the commissioner is studying the possibility of setting up a school which would permit personnel from patent firms and corporations to learn the theory of Patent Office practice. The idea is that industry would thereby be training its own future patent attorneys, rather than taking them out of the Patent Office. Other matters being considered include increasing research on information retrieval. As is generally known, this is very important because searching of the prior art is what takes a considerable part of the Examiner's time. Hence, if the searching time can be cut down, the Examiners could examine many more cases than is now possible. The Patent Office is also trying to do what it can to dispose of the average case more quickly. In this connection, it now takes more than three years on the average for a patent application to mature into a patent.

Two very controversial innovations apparently also are being given favorable consideration by the commissioner. Reference is made to maintenance fees on patents which have been in force for five years or more, and the so-called 20-year patent limitation. Bills requiring maintenance fees are pending in Congress, but so far as it is known no action has been taken on them. The so-called 20-year patent limitation is one of the proposals which pops up from time to time. Under such proposals no patent would run for more than 20 years from the *filing* date. Since sometimes patent applications are pending, even though through no fault of the applicant, for several years, it can be seen that such proposals if enacted would reduce the present 17-year patent monopoly in a number of cases.

Patent No. 3,000,000. A milestone in the history of the United States Patent System occurred on Sept. 19, 1961, when patent No. 3,000,000 was granted to Dr. K. R. Eldredge for an Automatic Reading System. The patent, which was assigned to General Electric Company, covers a device adopted by banks for reading and handling checks. It is asserted that 36 per cent of the checks now drawn are handled by the patented automatic system. According to information from the Patent Office, the genesis of the invention arose from the predicament of banks faced with the high turnover of clerical help. This resulted in the fear that the banks would not be able to keep up with the increasing volume of checks. Research was begun at the Stanford Research Institute to develop an automatic system. Among the requirements was a system, which, unlike punch cards, would be able to handle paper that in circulation had become creased and soiled. About five years ago, a magnetic ink system was hit upon and General Electric started to develop the instrument. About two years ago, installations by banks began. The Patent Office had examined the Eldredge patent application for more than five years.

Anti-Wrinkle Cream. At the time of this writing Revlon has stirred up tremendous interest in various circles, including the stock market, as a result of its marketing of the new skin preparation sold under the designation Eterna 27. According to the advertising which is used in the exploitation of the product, it contains what is said to be a patented product referred to as Progenitin. Investigation reveals that the patent in question is United States 2,971,534, issued to Ciba Limited of Switzerland.

*Richards and Cifelli, Newark 2, New Jersey

That patent deals with compositions for the treatment and care of skin. The compositions comprise from 0.1 to 1.0 per cent of pregnenolone, and/or a derivative thereof such as an ester or an ether thereof, in admixture with a cosmetic base.

According to the patent, pregnenolone and its derivatives stimulate the growth of the epidermis and lead to the increase of layers of epidermis cells and to cell proliferation, accompanied by an enlargement of nuclei and cytoplasm.

The skin preparation can be in the form of creams or liquids. Advantageous results, according to the patent, follow by the addition of one or more of the following: aliphatic hydrocarbon such as yellow or white petroleum jelly; triglycerides, such as hog fat, cocoa butter, almond oil; saturated or unsaturated higher fatty acids, such as myristic acid, undecylenic acid, oleic acid; Peru balsam; chlorophyll. Said to be particularly helpful are esters or ethers of benzyl alcohol, such as the benzyl ester of lauric acid, oleic acid or cinnamic acid, dibenzyl or pregnenolone-benzyl ethers, and benzylester of benzoic acid or of α-naphthoic acid. It is said that these derivatives increase the action of pregnenolone.

In addition, substances which stimulate the circulation of the skin, such as nicotinic acid amide, are also said to be advantageous. The latter was taught as a vitamin F synergist by Schaaf, one of the inventors of the present patent, in a prior patent, United States 2,437,561, March 9, 1948.

The patent gives examples for preparing so-called matt skin cream, fattening skin cream, face milk and skin cream.

Example 1, taken from the patent, follows:

The following substances are melted together on a water bath. 0.5 part of pure pregnenolone, 20.0 parts of stearic acid, 2.5 parts of almond oil, preserved, 0.8 part of cetyl alcohol, and 0.2 part of parahydroxybenzoic acid methyl ester, and the melt is heated until it has become clear and has reached a temperature of 80°C. There are also mixed together 1.8 parts of triethanolamine, 5.0 parts of glycerin and 69.2 parts of distilled water and the mixture is heated to 80°C. The strained melt having a temperature of 80°C. is emulsified with the filtered aqueous solution having a temperature of 80°C., and the mixture is stirred until cold. At 40°C. there is added the necessary mixture of perfume oils. The mixture is then further stirred until it has cooled to 25°C. There is obtained a matt skin cream.

All the claims appear to relate to emulsified preparations. Claim 1, being the broadest, is reproduced here.

"An emulsified preparation for the skin comprising from about 0.1 to about 1.0 per cent of a member of the group consisting of pregnenolone, its benzyl ethers and its esters with lower aliphatic carboxylic acids in admixture with a non-toxic absorbable cosmetic emulsion base."

By way of passing note, this patent was reported to the readers of this Journal in the June 1957 issue. As the saying goes: "It takes time to make good steaks." Apparently, the same is true of cosmetic creams. Of course, much of the time was probably required to obtain the necessary approval of the United States Food & Drug Administration.

"Merito" Held Registrable Over "Marques Del Merito"

In a very liberal view of what is registrable, the authoritative United States Court of Customs and Patent Appeals decided, four to one, that National Distillers and Chemicals' "Merito," used for rum, was registrable over the registered trademark, "Marques Del Merito," for wine.

At first blush, one can easily jump to the conclusion that the foregoing statement must be wrong, in view of the apparent similarity of the marks and the goods to which the marks apply. However, such is not the case. The explanation of the decision is that the court was impressed by the fact that the owner of the prior mark, that is "Marque Del Merito" entered into an agreement, back in 1946, under which the registrant consented to the use of National Distillers and Chemicals of the mark "Merito" for rum on a somewhat restricted basis, not here important. In this connection the court stated: "The agreements which applicant relies upon to support its right to use and register "Merito" for rum were made between parties, one being the owner of the cited registration, familiar with trade and the market practices involved here and in a much better position to decide on the likelihood of confusion which might injure the registrant than are we, or for that matter the Patent Office. The parties, by such agreements, recognize that applicant's use of "Merito" as limited by the agreements and as applied to rum concurrently with the registered mark "Marques Del Merito" for wines is not likely to cause confusion or mistake or deception of purchasers. We think, therefore, the agreements of November 27, 1946, by which the registrant consents to applicant's restricted use of "Merito" for rum, should be given effect in favor of applicant's right to registration."

The court referred to two other cases where courts gave significance to situations where parties had entered into agreements concerning the joint use of the same trademark for uses which might otherwise be confusing. One of the cases involved the well-known mark, "Esquire." The other case involved perhaps the even better-known trademark, "Sunkist." In the first case, the owner of the trademark, "Esquire," as applied to men's socks had contracted for joint use of the mark with the owner of the same mark as applied to the magazine specializing in men's fashions. In the second case, the California Fruit Growers Exchange, which had used the trademark, "Sunkist," on numerous articles such as oranges, lemons and so forth, contracted with the California Packing Corporation, recognizing the latter's rights to continue to use the mark, "Sun-kist," on canned and dried fruits and vegetables.

These cases show the value of so-called "consents," if you can get them. The dissenting judge, who happens to be chief judge of the court, took the position that he felt that there was nothing in the Lanham Trademark Act to allow concurrent registrations when such registrations are likely to cause confusion or mistake or to deceive purchasers. This judge felt that the net effect of the court's decision is to allow parties themselves to determine issues which Congress undoubtedly intended that the Patent Office and the courts should decide.

(Continued on page 645)

BACITRACIN

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2. SYNERGISM. Because of the synergistic chemotherapeutic activity of zinc bacitracin, it is currently being combined with antibiotics such as neomycin. Tablet and ointment formulations of zinc bacitracin and neomycin are stable, economical and provide excellent broad-spectrum coverage.

3. STABILITY. Zinc bacitracin offers superior activity stability at room and elevated temperatures. Stability is maintained even at the high temperatures required in the manufacture of pharmaceuticals needing heated ointment or suppository bases, oven-drying of granulations, molten sugars for candy troches.

4. ECONOMY. Zinc bacitracin stored for two years at 40° still passed the FDA minimum potency requirements. Storage and thermal stability eliminate the need for utilizing a high percentage of excess antibiotic, and reduce product cost.

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MASKING PHARMACEUTICALS

(Continued from page 636)

ies, then making random choices right off their shelves overlooks two points; one is deterioration from storage, the other is flavor specificity. All-purpose flavors in modern pharmacy do not exist. Today, one must rely on tailor-made specialties.

Physiological Problems

While attention is focussed on the primary tastes of bitter and sweet, the parts played by sour and salty often remain neglected. Yet these can be instrumental in solving problems of flatness of taste. Fruit flavors are ineffective in the absence of acids, and spice lacks flavor in the absence of salt.

Equally strange to many are the taste area's supplementary responses of heat, cold, bite and anesthesia. The problem of taste fatigue on the part of test panels can be eased by watching this principle: Taste only diluted medicine, and reverse the flavoring procedure by "medicating the flavor instead of flavoring the medicine."

Remember that zones responsive to bitterness occupy the rear portion of the tongue. It is therefore, senseless to taste medicine by placing it on the tip of the tongue. Ideally, it should be swallowed. Since this is perhaps medically inadvisable, some sort of method should be instituted to insure authenticity of taste sensation on the part of panellists.

Psychological Problems

The solution of flavoring problems is contingent upon judicious control in six different areas: patient, public, legislators, product developers, panel selectors, company management. Common knowledge is the psychological effect upon the patient and the public at large, from the presence of flavor in medicine. Less publicized are recent clamors, by well intentioned, but ill-informed members of legislative bodies, for abandonment of pharmaceutical flavorings. Cases of accidental poisoning were quickly attributed to flavor instead of carelessness. If taste-masked medicines are to remain, organized pharmacy must fight to prevent the threat of restrictive legislation. Proper psychological approach must help to sway product formulators toward applying common sense. The lack of it is evidenced by claims that only pediatrics need taste masking and that all flavors be "natural" and "official."

Management itself traditionally tends to relegate the masking of taste to a secondary role. For instance, such vital tasks as the recruitment of tastes panels sometimes are assigned to none other than the sales department. Flavor choices are often made to cater to the whims of department heads or high echelon executives. It is at this end, where a great deal of psychological ground work has to be laid, if pharmaceutical preparations are to taste better.

Economic Problems

Manufacturers are liable to regard any ingredient other than the active one as unnecessarily adding to cost. Flavorings fall into this category. Consequently the problem of flavor cost is given more emphasis than it deserves because low use level wipes out the economic problem. The few cases, where there are reasons for concern, apply to unfortified, natural flavorings. Their degree of concentration is self-limiting. Thus, higher rates must be used which in turn will impose increased money outlay for flavor.

In reality, an economic problem in masking pharmaceuticals, thought by many to be pressing, does not exist. Calculate costs on the basis of use, steer clear of "natural" flavors and wider patient acceptance and marketability will compensate for the very minor additional costs.

Educational Problems

From an educational standpoint the area of flavor technology is being neglected. College curricula include little teaching on flavor and taste. The official compendia feature the same shopworn monographs on flavors found in their predecessors of decades ago. In fact, the literature as a whole on the subject is extremely scanty.

Flavoring chores in the industry are assigned to its employee pharmacists who lack basic training in "flavor," or they are "farmed out" to flavor supply houses, whose experts (with a few exceptions) are chemists without basic training in "pharmacy." This gap deserves the attention of pharmacy at its highest level, in order that masking of modern pharmaceuticals as a scientific and artistic endeavor be elevated above the level of "hit and miss" or "trial and error."

Organizational Problems

Masking work must be accepted as essential and must be integrated into product development. Taste panelists must be appointed on the strength of tasting ability and interest rather than position within the organization.

A separate flavor laboratory, functionally designed and purposefully equipped, will inspire workers to finer performance. It is also a good idea to set up systems whereby promising individuals receive training in flavor technology.

Summary and Conclusions

The masking of modern pharmaceuticals can be improved by following these rules:

1. weigh flavor's purpose
2. insure its compatibility, stability, and strength
3. choose harmonious color
4. make vehicles tasteful
5. mask components separately
6. employ basic flavoring materials
7. synchronize flavor development with product development

(Continued on page 645)

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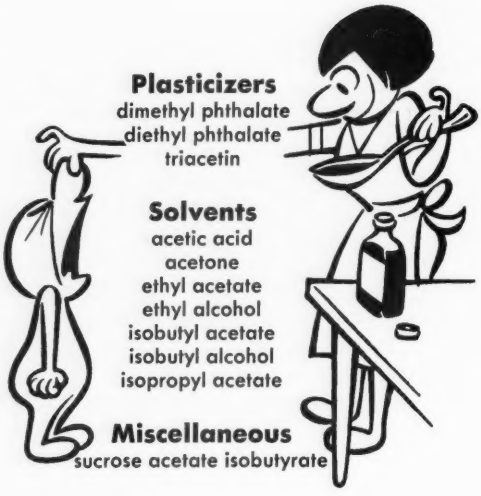

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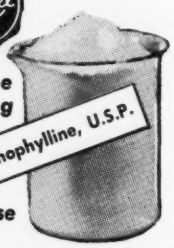

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MASKING PHARMACEUTICALS

(*Continued from page 643*)

8. allow ample time for the solution of masking problems
9. secure product information
10. reject "pre"-flavoring
11. obtain ample working batches of medicine
12. eliminate flavor "libraries"
13. satisfy primary taste and other sensory responses
14. overcome taste fatigue
15. remember localization of bitter area
16. check frequency of dosage and type of patient
17. don't limit masking of medicine to pediatric ones
18. don't restrict selection of flavors to official ones
19. select panels intelligently
20. fight prejudice against flavors
21. economize by employing flavors of higher concentration
22. identify product through flavor
23. let the dictates of the market influence your flavor choice
24. further education in flavor science and technology
25. gear your organization to flavor work

These observations have been made from the vantage point of the flavor supplier's position. His service to the pharmaceutical industry enables him to discern the problem of medicine's taste from a plane, broader than that commanded by pharmacy itself. The benefits to both industries will not remain wanting for long.

PATENT AND TRADEMARKS

(*Continued from page 640*)

RECENT PATENTS

2,999,792—U.S.A.—Serologic Test For Viral Antigens.

2,999,793 — Warner-Lambert Pharmaceutical Company — Diagnostic Preparation for The Determination of Serum Alkaline Phosphatase.

2,999,859—Merck & Co., Inc.—11, 20-Bix Oxygenated Pregnadiene-3-One 3-Ketals.

2,999,860—G. D. Searle & Co.—2-Substituted Derivatives of 7-Alkoxy-1, 2, 3, 4 Tetrahydro-8H-Pyrido [1. 2.] Pyrazin-8-Ones and 7-Alkoxy-1, 2, 3, 4, 5, 9-Hexahydropyrido [1. 2] [1. 4] Diazepin-9-Ones.

2,999,880 — Bristol-Myers Company — N-Substituted-N^1-Benzoylhydrazines.

3,000,706—Boots Pure Drug Company—Control of Bacteriological Sterilisation.

3,000,785—Societe des Usines Chim. Rhone-Poulenc—Spiramycins.

3,000,787 — Crinos Industria Farmacobiologica — Heparinoid Anticholestrolemic Factor.

3,000,788—The Dow Chemical Company—Propagation of Modified Infectious Canine Hepatitis Virus in Tissue Cultures of Pig Kidney and the Preparation of a Vaccine Therefrom.

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3,000,836 — Ben Ginsburg — Stabilized Whole Blood Standard.

3,000,874—Eli Lilly and Company—Sulfate Salt of Erythromycin Monoester.

3,000,884 — Ciba Pharmaceutical Products, Inc. — 14α-Hydroxy-18-Oxygenated Pregnenes.

3,000,885 — G. D. Searles & Co. — 2-Acyl-10-Oxyalkyl-piperidinoalkyl-Phenothiazines.

3,000,886—Smith Kline & French Labs.—Substituted Aroylalkyl Phenothiazinyl-Alkyl Piperazines.

3,000,891 — Paul A. J. Janssen — 1-Thenoyalkyl-4-Aroylpiperazines.

3,000,893 — Ciba Pharmaceutical Products, Inc. — Methyl O-Piperonyloyl-Reserpate.

3,000,898 — Ciba Pharmaceutical Products, Inc. — New Benzimidazoles.

3,000,899 — Ciba Pharmaceutical Products, Inc. — 1-R-2-Amino-Indoles.

3,000,903 — Lakeside Laboratories, Inc. — Phenylalkyl-hydrazines and Use as Psychotherapeutics.

3,000,910 — Upjohn Company — 17-Isonitrose-3-Aminoethers of the Androstane Series.

3,000,911 — Olin Mathieson Chemical Corp. — 9α-Fluoro-12β-Hydroxy Derivatives Of the Pregnane Series.

3,000,912 — Syntex, S.A. — 2α-Substituted Methyl Androstanes.

3,000,913 — Firma Schering A. G. — 10-Acetyloxy Derivatives of $\Delta^{1,4}$-Estradiene 10-XI-17 Beat Diol-3-One Derivatives.

3,000,914 — G. D. Searle & Co. — 3β-Alkanoyloxy-6-Methyl-5, 16-Pregnadien-20-Ones.

3,000,915 — Olin Mathieson Chemical Corp. — 9α-Halo-21-Alkane Sulfonates of the Pregnane Series.

3,000,922—Parke, Davis & Company—Quarternary salts of Chloramphenicol Esters of Amino Acids.

3,000,929—William Shive and Charles Gordon Skinner, Jr.—O-(3-Phenylcarbazyl)Serine.

3,000,938 — Abbott Labs. — α-Cyclopropylbenzylurea.

3,000,946 — Ciba Pharmaceutical Products, Inc. — β-Amino-α-Bromo-Propiophenones.

3,001,909 — Merck & Co., Inc. — Coccidiosis Control Composition.

3,001,910 — Firma Temmler-Werke — Anorexigenic Propiophenones.

3,001,911—The Upjohn Company—Hydrated Calcium Acid Novobiocin.

3,001,914—Ariel A. Andersen—Bacterial Aerosol Analyzer.

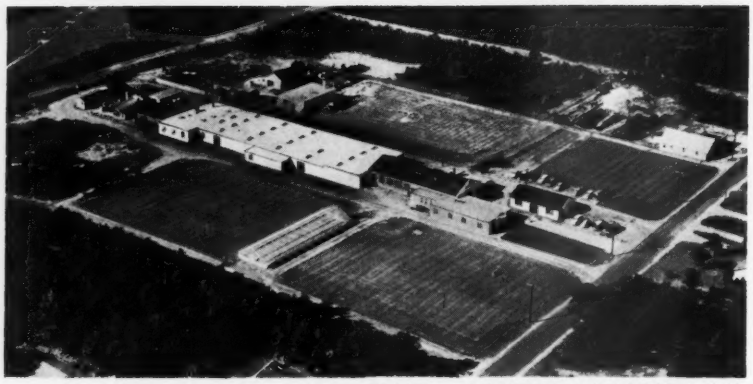
3,001,915—Miles Laboratories, Inc.—Diagnostic Composition.

3,001,949 — Colgate-Palmolive Company — Shampoo Composition.

3,001,986 — G. D. Searle & Co. — 3-Oxygenated 17-Amino-17-Carboxyethylandrostane Lactams and Δ^4 Compounds Corresponding.

3,001,989 — Syntex S.A. — 6β, 19-Oxido Androstane Derivatives.

(Continued on page 661)



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Perfumer's Shelf

Three Perfume Men Die

Last month saw the passing of three old-timers in the perfume field. Two of these we knew well; the third we had met socially, but knew of his reputation for many years.

Philip Chaleyer was a pioneer perfumer in America. Nearly 40 years ago he was a perfumer for Givaudan, and approximately 30 years ago he founded his own business.

Mr. Chaleyer was more of a perfumer than a business man, and more creative than routine. One of his outstanding creations was the development of Tweed.

In his later years, following retirement from his own business, he spent a great deal of time in teaching, consulting and writing. During this period, he taught at N.Y.U., wrote a number of articles, especially for Beauty Fashion, and was consultant to Hoffmann-La Roche.

We particularly remember him because he was the originator and first editor of this department.

Charles Swan, a pioneer in the development of the aromatic business in this country, was a factory man *par excellence* in the essential oil business. When we first knew him, he was a young fellow in the factory of Chiris, under the direction of B. T. Bush. It was at Chiris, that he developed a fine instinct and intuition for factory processes.

During the last 12 years, Mr. Swan was manager of the Boonton plant of Norda Essential Oil and Chemical Company.

Ernest Beaux was a great perfumer, and it might not be too much to say that his was the best known name around the world in perfuming. He was a colorful individual, pursued interests in art, music, painting, literature and was a superb gourmet.

Ernest Beaux was known for introducing the use of aldehydes in combinations and quantities creating a new trend in perfuming.

Scented Polyethylene

Scented polyethylene had a lot of publicity a little over a year ago when a new scenting process was developed. At that time many people expected a big future for scented polyethylene in bags and wrappings. However, for some reason or other, this excitement died down and we have not heard anything more about scented polyethylene until just recently, when Bernstein & Sons started packaging boy's shirts in mint-scented polyethylene bags.

We would like to know just why mint was the single selected odor, and we await with interest, the success of this new packaging and merchandising venture.

Flavored Vitamins

In order to make a vitamin tablet taste like a candy that can be chewed, Abbot Laboratories uses a film coating on its Vi-Daylin Chewables. Raw vitamins are processed in a fat-soluble film where they are held until they reach the gastrointestinal tract. The candy-flavored oils, enveloped in a water-soluble film, are released in the mouth.

Scented Postcards

Perfumes and flavors are branching out into a wide variety of interesting and effective new uses.

Some of these new uses are running into unexpected troubles, such as the scented newspaper advertisements, which we have discussed in the past. Because of delays in delivery and changes of temperature, the advertisements did not reach the reader in the scented form that the advertiser had planned. However, these problems are being worked out, and we expect more scented advertising in the future.

We think this will take place primarily in mailing pieces rather than in newspaper or magazine advertising, because it would seem a bit difficult to include two or three competing odors within one publication.

A newcomer, in the use of scented advertising, plans to promote Swiss Miss Instant Hot Chocolate with chocolate-scented postcards. Chocolate-colored 1,000-line newspaper ads are scheduled in test markets, and many newspapers have agreed to use a chocolate-scented ink.

We were slightly puzzled to read that Countess Mara, Inc., is impregnating men's ties with strawberry, pineapple, cut grass, leather and blue grape. We are not sure just exactly what this is supposed to accomplish and whether the impact is to take place on people other than the necktie wearer, or if it is for people who like to chew neckties.

Compounder's Corner

Nucleic Acids in Hair Dressings

Nucleic acids lend themselves to incorporation in anti-static hair dressing lotions, according to *Schimmel Briefs*, June 1961. Their use in hair grooming aids is covered by U. S. Patent 2,960,442, Schwarz to Schwarz Bio-Research, Inc. The large, elongated molecules of nucleic acid are believed to form an oriented thin film on the hair fibers. The film tends to dissipate or prevent the accumulation of a static electric charge on the hair fibers when the hair is combed or brushed. The anti-static effect may be due to the presence of a variety of functional groups (amino, hydroxyl, phosphate) in the nucleotide chains.

Aqueous solutions of deoxyribonucleic acid (DNA) or ribonucleic acid (RNA) for use as hair dressings preferably contain from 0.5 per cent to two per cent of nucleic acid. The acids themselves are not soluble but go into solution when neutralized with a dilute alkali. The *p*H of the final solution should be in the range of 6.0 to 8.0. A good preservative must be used in the solutions to prevent bacterial growth. Preservatives mentioned in the patent include sodium ethyl mercurithiosalicylate, chlorobutanol and sorbic acid.

In one method of preparation, commercial ribonucleic acid is wetted with approximately an equal weight of ethyl alcohol, which may be the relatively low-priced denatured alcohol of formula 3A. The mixture is then slurried by gradual addition of about 20 per cent by weight of tap water. To this suspension is added approximately 20 per cent by weight of two N NaOH which causes all of the nucleic acid to dissolve and results in a *p*H of approximately 8.5. To this solution may be added about 20 per cent by weight of a commercial perfume oil, diluted with about four times the amount of alcohol used for the original wetting. The added alcohol serves as an aid in preserving. The entire solution is filtered brilliant and then diluted with tap water in amount approximately five times the total volume and is then packaged, desirably in plastic spray bottles.

Water soluble sodium ribonucleate is available commercially and may be used to prepare hair dressing lotions. A typical formulation is given below.

	Parts
Ethyl alcohol, S.D. 3A	25.0
Sodium ribonucleate	7.5
Water	200.0
Polyoxyethylene sorbitan monooleate	0.25
Sodium hydroxide, 1 N. soln.	1.8
Chlorobutanol	1.0
Eau de cologne concentrate	0.5

Mix thoroughly, filter with filter aid and dilute to a total of 500 parts.

The hair dressings based on nucleic acid cause no greasiness or stiffness and the film does not flake off, according to the patentee. The film is easily removed from hair with a mild shampoo. In view of the biological origin of the nucleic acids, it is rather surprising to find that they are odorless and present no problem in regard to the perfuming of hair preparations.

Color Masking Tablets

A method is suggested for the tableting of chemicals which vary slightly in color from lot to lot in a note by S. J. Tucker and F. A. Oyer of Smith, Kline & French Laboratories, Philadelphia (*J. Pharm. Sciences*, Sept. 1961, p. 803). The impurity causing the variation may be biologically insignificant and of such a nature as to be undetectable analytically and impractical to remove chemically. If the dose of the active ingredient is small, the problem is minimized since the diluents will usually overcome the difficulty. However, if the dose is large, dilution is no longer effective.

The authors found that by employing the technique of granulation by spray drying, moderate color variation from lot to lot can be overcome.

Essentially, the technique consists of suspending the active drug and diluents in a solution containing methylcellulose and a dye (the color and amount depending upon the objective). The suspension is then spray dried, the methylcellulose and the dye thus coat the individual particles.

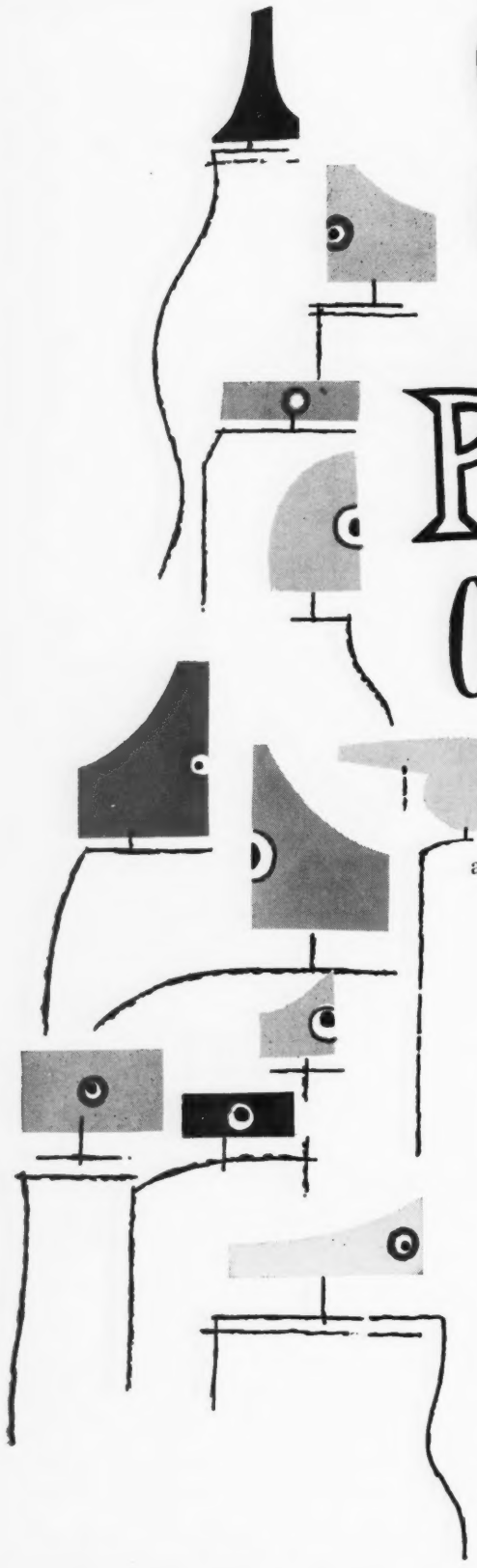
Three hundred grams of a therapeutic agent and 150 gm. of terra alba were suspended in a solution containing 1.2 gm. of FD&C yellow No. 5, 450 ml. of a 3 per cent Methocel (15 cps.) solution, 75 ml. of SD No. 30 alcohol, and 350 ml. of water. The material was then spray dried using a Niro Model Minor spray dryer under the following conditions: inlet temperature, 165°; outlet temperature, 72°; atomizer pressure, 6.2 kg./cm.^{2}.

This procedure was repeated using a different batch of the same therapeutic agent. The two batches of chemicals were visibly different in color shades.

The two finished powders were no longer visibly distinguishable, and the similarity was maintained after compression.

Assay for Neomycins B and C

A spectrophotometric assay for neomycins B and C in pharmaceutical preparations is introduced in a paper by J. W. Morgan, A. B. Honig, A. T. Warren, and S. Levine, Quality Control Laboratories of E. R. Squibb & Sons, Inc., New Brunswick, N. J. (*J. Pharm. Sciences*, Aug. 1961, pp. 668-671).



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At present, neomycin in formulations can be assayed only by microbiological methods, which many laboratories are not equipped to carry out. A search for an alternate method which would also save time resulted in a procedure based on chemical reactions.

Interfering substances and degradation products are removed by column chromatography; the neomycin is subjected to an acid hydrolysis. The quantity of furfural thus obtained is determined colorimetrically by producing a stable color-complex with p-bromoaniline.

Results agree with microbiological assays and the decrease in activity by normal and accelerated degradation is followed by the chemical method.

In use for over a year, this method has proved very satisfactory, the authors report.

Lip Jellies

A basic formula for lip jelly (Poucher) is suggested by A. E. Desperrois, in *Chemical Products*, Jan. 1961, p. 24.

	Parts
Glycerine	75
Gelatin	2
Formaldehyde (40%)	1
Distilled water	22

This formula may be modified by adding coloring matter and fragrance.

Another formula (Cerebelaud) contains:

	Grams
Edible gelatin	20
50% Glycerine in rose water	1000

The end product contains two per cent gelatin in a 50 per cent (approx.) glycerine solution in an already perfumed vehicle. This jelly may be tinted to suit.

Sterilizing Eye Drops

Aqueous eye drops must be heated in the final container at 98° to 100°C. for 30 minutes under an interim direction in the British Pharmaceutical Codex 1959. Actually sterilization by autoclaving is the method of choice but is not always practical because of instability of some drugs used in ophthalmic practice and because many containers currently on the market do not withstand autoclaving.

It is permissible, of course, for any other method of preparation (for example, an aseptic technique or autoclaving) to be used, provided that the resulting product is identical, in microbiological and chemical quality and in stability, with that produced when the B.P.C. method is followed. However, the eye-drops must be freshly prepared, that is, dispensed within 24 hours of making. Neither an aseptic technique nor the heating procedure described in the B.P.C. is certain to remove or kill all living micro-organisms, and the containers and preservatives at present in use cannot be relied upon to maintain sterility, even if this is attained initially—for example, by autoclaving. In addition, some eye-drops are not chemically stable.

Various types of steamers, using free-flowing steam, are available for heating eye-drops in the final containers at 98° to 100°C. Autoclaves or pressure-cookers may also be employed for this purpose, the steam being allowed to issue freely from the steam-vent so that the pressure does not rise above that of the atmosphere.

The following technique has been found successful in the laboratory and is suggested for processing "one or two" containers: Place the container, with the screw-cap loosened about half a turn to prevent ballooning of the rubber bulb, in a water-bath with the level of water just below the cap of the container. Heat the water to boiling, cover with a well-fitting lid, and boil gently for 30 minutes; tighten the screw-cap immediately the heating is completed and allow to cool.

(Preparing and Sterilizing Eye-Drops, by S. C. Jolly, Editor, B.P.C., *The Pharm. J.*, Dec. 24, 1960, p. 587.)

Dosage Uniformity in Compressed Tablets

Among the essential attributes of a well-made tablet uniformity of drug dosage is of prime importance. In compressed tablets this is dependent upon a uniform distribution of the active ingredient or ingredients throughout the tablet matrixes and upon a constant tablet weight.

The British Pharmacopoeis Commission, in setting standards for tablets makes the assumption that a perfect distribution within the tablet does indeed exist. Therefore it employs the criterion of uniformity of tablet weight as a control of uniformity of drug dosage.

Problems associated with mixing of solids are many and complex. No hard and fast rule exists whereby homogeneous mixing can be obtained invariably and assuredly. The analyst is therefore forced to establish the quality of the tablets which he analyzes by making an assumption for which he has no real basis.

A study was undertaken to determine the actual variability in drug dosage of 12 different products, obtained directly from the manufacturer. They represent a group of tablets, official in U.S.P. XVI, having allowable potency add weight tolerances of plus or minus five per cent. Since 100 tablet lots were used representing a single sample of production, it was not possible to estimate the sampling error within a brand.

As a result of this work the authors arrived at the following conclusions:

1. Of the 12 products studied, four failed to comply with U. S. P. XVI tolerances for potency and another failed to meet those for uniformity of tablet weight.

2. The actual variability in drug dosage is as a rule greater than would be apparent from the variations in individual tablet weights.

3. The degree of mixing found in a batch of tablets is not independent of tablet weight. Greater deviations were found to occur in the lighter weight tablets.

4. For the tablets studied, a reasonable estimate of the degree of mixing could be obtained by assaying individually the three lightest weight tablets for each brand.

5. Should these findings (lighter weight tablets being more variable) prove to apply to all tablets, then a test based on the analysis of a small number of the lightest weight tablets, or groups of tablets, could be adopted as a control over uniformity of drug dosage in compressed tablets. Used in conjunction with the uniformity of weight test, it would provide a more effective control over excessive variability in tablets.

R. E. Moskalyk, L. G. Chatten, C. E. Cox, and M. Pernarowski, *J. of Pharm. Sciences*, Aug. 1961, pp. 651-657.

Progress with FATTY ACIDS

SANDPAPER LASTS LONGER

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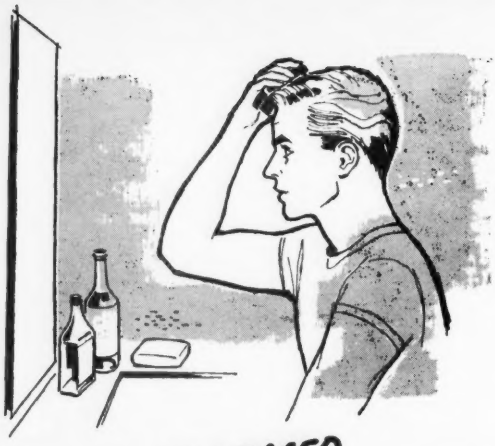

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Titre	134.5°—138°F.	37.4°F. max.
Color 5¼" Lovibond Red*	2.0 max.	1 max.
Color 5¼" Lovibond Yellow*	10 max.	10 max.
Unsaponifiable	0.75% max.	1.5% max.
Saponification Value	204—207	198—203
Acid Value	203—206	197—202
% F.F.A. as Oleic Acid		99 min.
Iodine Value (WIJS)	4—6	95 max.
Refractive Index 50°C. (Av.)		1.4505

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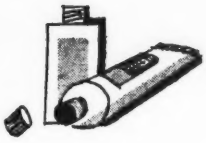

Advancing Therapy

Synthetic Penicillin

Prostaphlin is the third member of a series of synthetic penicillins produced by Bristol Laboratories. The new compound is resistant to staphylococcal penicillinase, which permits it to be effective against so-called resistant strains of staphylococci, it is sufficiently resistant to acid hydrolysis to permit oral administration, and is more potent than the previous Staphcillin against penicillin-resistant staphylococci strains.

The new derivative is 5-methyl-3phenyl-4-isoxazolyl penicillin as the monohydrated sodium salt, a colorless, crystalline solid stable at room temperature when dry. It is freely soluble in water and slightly soluble in polar organic solvents; the aqueous solution, with one per cent of sodium citrate, is stable for about 24 hours.

This synthetic penicillin is more active than Staphcillin against *S. aureus*, *D.pneumoniae*, and *S.pyogenes*, but is less active than penicillin G. Animal studies have shown it to be not significantly different pharmacologically from other penicillins now in use. Prostaphlin is non-toxic and non-irritant and readily absorbed after oral administration.

Prostaphlin is primarily recommended for oral therapy in cases of infection due to penicillin G-resistant *S. aureus*.

Of 199 cases treated with prostaphlin, 104 (53.9%) were cured, 69 (35.8%) showed improvement and 20 (10.4%) were classified as "unsatisfactory." Seven patients had septicemia or bacteremia (two associated with endocarditis); and in this group two were reported "cured" three "improved" and one was not evaluated. Among the cases of pneumonia, cures were reported in six and improvement in two.

Prostaphlin has been administered successfully over a wide range of daily doses. For 181 patients, the average unit dose was 0.54 gms. every six hours and average duration of treatment was 9.7 days. Experience indicates that in the adult an average dose of 500 mg. every four to six hours for a minimum of five days is sufficient to control mild to moderate staphylococcal infections encountered in skin, soft tissue or the upper respiratory tract. For staphylococcal septicemia or other deep-seated serious infections, doses up to two gms. every six hours may be used depending on the nature of the infection and the clinical response obtained.

In one study, Prostaphlin was administered in doses of from 0.5 gms. to two gms. every six hours for one month to a group of 40 normal adult males. The drug was well-accepted and tolerated. No reactions occurred. Laboratory and physical examinations showed no changes from control levels in the test subjects.

Absorption studies indicate that following single doses of Prostaphlin from 0.5 gms. to two gms. with the subject in a fasting state, peak levels are achieved between one-half and one hour after ingestion of the drug. Serum levels at two hours are well above minimum inhibitory concentrations needed for suppression of most Gram-positive organisms. Minimal serum levels are present between three and four hours, and in general, serum is clear six hours following the original dose.

In the 199 case records reviewed for this report, there were 15 patients in which side effects of one type or another appeared. In only four of these, the attending clinician was reasonably sure that the effect was primarily due to the drug. One was a rash, and three were gastrointestinal distress.

To date, reactions to Prostaphlin have been rare and mild in nature. No serious anaphylactic reactions have been encountered although it is conceivable that they could occur in penicillin-sensitive subjects.

Bromindione

A new, potent, long-acting anticoagulant of the indandione family, p-bromoindandione, has proved satisfactory for both short-term therapeutic and long-term prophylactic use, according to A. J. Seaman (*J.A.M.A.* 177:712,, 1961). In this study, the optimum initial dose for the induction of therapeutic anticoagulation in adults was ten to 15 mg. The fall in prothrombin and proconvertin activity following the administration of this dose usually continued for 48 hours and sometimes for 96 hours. Maintenance dosage was either six mg. every third day or 2.6 mg. per day. Dosage had to be individualized. No serious side effects were observed during administration to 58 patients for a combined total of 10,000 treatment days.

Guanethidine in Hypertension

Good postural blood pressure control with selective sympathetic inhibition and without parasympathetic inhibition has become a practical proposition with the emergence of two drugs, about two years ago; Bretylium tosylate and guanethidine sulfate. Results obtained with guanethidine sulfate in the treatment of 28 patients for a period of up to 12 months is reported in a paper by G. E. Bauer, F. J. T. Croll, R. B. Goldrick, D. Jeremy, J. Raftos, H. M. Whyte and A. A. Young of the Cardiovascular Clinic, Sydney Hospital (*Brit. Med. Journal*, Aug.

12, 1961, pp. 410-415).

The authors found guanethidine the first of the ganglion blocking and adrenergic-blocking agents suitable for out-patient stabilization. It proved preferable to begin with a small dose of guanethidine, such as 12.5 mg. given in one single daily dose, and gradually increase the dose at weekly intervals until an adequate response, as judged by a satisfactory fall in the standing blood pressure or the appearance of hypotensive symptoms, is obtained. Used in conjunction with saluretic agents, chlorothiazide or hydrochlorothiazide, the effective dose of guanethidine was between 12.5 and 75 mg. a day.

On account of the slow action the authors do not regard the drug as very suitable for the control of hypertensive crises such as acute left ventricular failure with pulmonary oedema or encephalopathy. Under those circumstances it is preferred to use parenteral pentolinium or, better still, parenteral chlorisondamine, which lower blood-pressure within minutes.

Although guanethidine sulfate and bretylium tosylate appear to be similar in their main pharmacological action, they exhibit certain differences, which have an important bearing on their practical use in clinical medicine, according to the authors.

The investigators at Sydney Hospital established the following important differences:

1. Each drug has been shown to have its own peculiar side-effects. Bretylium commonly causes parotid pain and muscle weakness, while guanethidine is more likely to induce diarrhoea and seems to be associated in some patients with the appearance of depressive symptoms.

2. Drug tolerance is a frequent problem with bretylium; with increasing length of observation it has become obvious that many patients require increasing quantities of the drug. This unfortunately necessitates frequent visits to the clinic or the physician's consulting-room, resulting in increased loss of time from work and domestic duties and leading to excessive economic burdens, as well as placing a great strain on the medical staff. So far, tolerance has not been a problem with guanethidine, although minor adjustments in drug dosage may occasionally be necessary.

3. The prolonged action of guanethidine makes it possible not only to administer the drug in a single daily dose but also to eliminate its effectiveness with fewer blood-pressure readings. Bretylium has a shorter duration of action and is given in three divided doses a day. It is therefore essential to take several blood-pressure readings at various intervals after administration of the drug to assess its effectiveness.

4. Although neither drug is fully absorbed from the gastro-intestinal system, guanethidine is somewhat superior and gives more constant day-by-day blood-pressure reduction. The incomplete and irregular absorption of bretylium is partly responsible for the unpredictable hypotensive effects, not unlike those seen in the early days of oral hexamethonium treatment.

5. The number of tablets required is less with guanethidine than with bretylium; and this, in our opinion, is a definite advantage. The largest dose of guanethidine prescribed by us was 75 mg. a day—three 25-mg. tablets. With bretylium we have given up to 3,000 mg. a day, or 15 200-mg. tablets, and to many of our patients this has been a definite psychological hardship, quite apart from the bitter taste and large bulk of the tablets.

In summary it is felt that guanethidine is a more suitable drug for routine clinical use.

Antitrichomonal Agents

Some 5-nitrothiazoles, 5-nitropyridines and 5-nitropyrimidines have been synthesized and evaluated by R. M. Michaels and R. E. Stoube (*J. Pharm. Pharm.* 13:601, 1961) against *Trichomonas vaginalis* and *Trichomonas foetus in vitro* and *in vivo* in the mouse, hamster and monkey. Although 2-amino-5-nitropyrimidine, 2-acetamido-5-nitropyrimidine and 2-trifluoroacetamido-5-nitropyrimidine were highly active in mice infected with *T.vaginalis* the activity was not superior to the standard 2-acetamido-5-nitrothiazole. The nitropyrimidines were highly species specific, being much more active *in vivo* against *T.vaginalis* than against *T.foetus*. One compound, 2-amino-5-nitropyrimidine was selected as the best of this series because of the high blood levels obtained after a single oral dose in a monkey, and its presence in a biologically active form.

Polythiazide Diuretic

The search for orally effective and safer diuretic agents led to the introduction of benzthiadiazines as a new class of diuretics.

Recently attempts have been made to develop more potent benzthiadiazines with a greater specificity in their natriuretic action, lesser effect on excretion of potassium or on glomerular filtration rate. Such efforts culminated recently in synthesis and development of polythiazide, 2-methyl-3-(β,β,β -trifluoroethyl-thiomethyl) - 6 - chloro - 7 - sulfamyl-3,4-dihydro-1,2,4 benzothiadizine, 1, 1 dioxide.

Polythiazide was found by A. Scriabine et al. (*Proc. Soc. Exptl. Biol. Med.* 107:864, 1961) to be a highly potent, orally active diuretic agent in rats and dogs. Duration of polythiazide action was prolonged. The diuretic effect was demonstrated as late as 12 to 24 hours after oral administration of the drug. Onset of polythiazide action was rapid. After intravenous administration to dogs, the maximal saluretic effect was obtained in ten to 20 minutes. The onset of action after oral administration was less than one hour; maximal effect was obtained either during the first or second hour. Polythiazide produced an almost equal increase in excretion of sodium and chloride. The increase in excretion of potassium was approximately 1/10 of that of sodium. In acute experiments on rats polythiazide was found to be ten times more potent than trichlormethiazide in its natriuretic effect but only 0.4 times as potent in its kaliuretic effect. Polythiazide at dose levels as high as 10 mg/kg i.v. did not depress glomerular filtration rate. Polythiazide is a carbonic anhydrase inhibitor *in vitro*. *In vivo*, polythiazide produced no or only minimal increases in excretion of bicarbonate in animals with normal acid-base balance. The drug was effective as saluretic agent in dogs with experimental metabolic acidosis or alkalosis. Antihypertensive activity of polythiazide was clearly demonstrated in rats and dogs with experimental hypertension. The antihypertensive effect had a slow onset and became evident on the second day of treatment.

BRITISH PHARMACEUTICAL INDUSTRY

(*Continued from page 587*)

peared to be high, the industry has at times attracted some unsavory publicity. High profits, however, are to be expected on newly introduced drugs as costly development charges have to be recovered. There have been prolonged negotiations between the Ministry of Health (which operates the N.H.S.) and the prescription drug section of the industry (through the latter's trade association, the Association of British Pharmaceutical Industry) to devise methods of pricing which will ensure a correspondingly higher return to the firms that undertake research than to those that do not, these latter to receive a rate of profit acceptable to the Ministry.

Fruitful research culminates in the building of new manufacturing plant or the extension of old. In 1959 capital equipment involving expenditure of some eight million pounds ($22.4 million) came into use, while this year the figure seems likely to reach 12 million pounds ($33.6 million). Expenditure on this scale indicates a considerable degree of confidence within the industry—as there should well be, since the demand for pharmaceutical products is likely to grow; certainly this section of the chemical group of industries seems destined to continue to make progress and to be prosperous.

PATENTS AND TRADEMARKS

(*Continued from page 646*)

3,001,990 — **Olin Mathieson Chemical Corp. — 9α-Halo-11-α-11βHydroxy Steroids of Androstane Series.**

3,001,991 — **American Cyanamid Company — 16α, 17α-Isoalkylidenedioxy-4-Pregnene-3, 20-Diones.**

3,001,992—**The Norwich Pharmacal Co.—N-(5-Nitro-2-Furfurylidene)-Aminoheterocycles.**

3,001,994—**Olin Mathieson Chemical Corp.—Substituted Dihydrobenzothiadiazines.**

3,002,000—**Farbenfabriken Bayer Aktiengesellschaft—1, 2-Alkylene-Dihydropyrimidone-6-, and 1, 2-Alkylene-imidazolinones-(5).**

3,002,001—**Sterling Drug Inc. — 4-Alkylimino-1-[Aromatic-(Lower-Alkyl)]-1, 4-Dihydroquinolines.**

3,002,005—**The Upjohn Company—7-Methylprogesterone.**

3,002,007—**G. D. Searle & Co.—Oxygenated Derivatives of 4-Methylestranes.**

3,002,008—**G. D. Searle & Co.—16-Alkenyl and 16-Alkynylestratriene-3, 16, 17-Triols.**

3,002,009—**Lasdon Foundation Inc.—1, 3, 5(10)-Estratrien-3, 16, 17-Triol-3-Alkenyl Ethers.**

3,002,010—**American Cyanamid Company — Acylated Steroids.**

3,002,021—**Chas. Pfizer & Co., Inc.—New Derivatives of the Tetracycline-type Antibiotics.**

3,002,883—**The Dow Chemical Company—Disinfectant Compositions.**

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3,002,886—Synergistics, Inc.—Betaine Salicylates.

3,002,892—Elmo S. Dooley—Process for Preparing Bacteriophage-Impregnated Paper Discs for Rapid Identification of Bacterial Stains.

3,002,965—Hoffmann-La Roche Inc.—Nucleosides.

3,002,968—American Cyanamid Company—Bismethylenedioxy Steroids.

3,002,969—The British Drug Houses Limited—3β-Hydroxy-6-Methyl-Δ^5-Steroids.

3,002,970—Ciba Pharmaceutical Products, Inc.—18-Oxygenated Steroids.

3,002,971—Ciba Pharmaceutical Products, Inc.—18-Oxygenated Steroids.

3,002,972—Ciba Pharmaceutical Products, Inc.—18-Oxygenated Steroids.

3,002,973—Abbott Labs. — 6-Chloro-3-Cycloalkyl-7-Sulfamyl-1, 2, 4-Benzothiadiazine-1, 1-Dioxides.

3,002,976—Paul A. J. Janssen—1-(2-Thienyl)-ω-(4-Arylpiperazine) Alkanols.

3,002,981—Les Laboratoires Francais de Chimiotherapie —Androstene-16-Ones.

3,002,983—Lasdon Foundation, Inc.—1, 3, 5(10)6, 8-Estrapentaen-3, 16β, 17β Triols.

3,002,992—The Givaudan Corporation — Alkoxyalkyl Esters of p-Methoxy Cinnamic Acid.

ETHICAL DRUGS

(*Continued from page 576*)

had made a strong comeback with Decadron, which now vies with Medrol and Aristocort for brand leadership.

This brand vs. brand competition goes on in nearly all of the high-volume areas of the pharmaceutical market. It is crucially important for a producer to get mileage out of a top seller. Introductory costs are high and to earn money from a top seller a company must keep the drug a top seller for some period of time. It is unlikely, for example, that Roche made much money last year out of high-flying Librium. However, it should chalk up a good net this year on high volume and lower promotional costs.

It is perhaps unfair to concentrate so much on the products with the box-car volume figures. There are a number of companies in the industry which do very handsomely, thank you, on products selling in the $1,000,000 to $4,000,000 range. The best example is probably G. D. Searle & Company, which has a short line of specialties. Among these specialties, however, are such longtime good sellers as Dramamine and Metamucil. Searle's total volume of $35,000,000 is less than the volume done by Parke, Davis in Chloromycetin. However, Searle's net-to-sales ratio is the envy of the industry and one of the most outstanding in all American business.

All drug companies, big and small, recognize that the key to growth is the development of new products. A top seller is nice. But even nicer is the test product in the laboratory which will be a top seller in two or three years. •

MEN'S COSMETICS

(Continued from page 590)

leaders. It is very rare for any particular one to exceed a total volume of $250,000.

Most of the brands are step-children, belonging to the leading companies and given little time or attention. With the exception of one or two companies, that make some effort of promotion, any progress in the field, must be attributed to the sales effort of leading stores.

Obstacles hindering the field of men's cosmetics include:

1. Limited advertising.
2. Limited store cooperation with stimulation of point-of-sale activity.
3. Bearing a name associated with women's products.

Suggestions for establishing a successful men's cosmetic line might include:

1. A name not associated with a name that is famous for something else, particularly a feminine product.
2. A suitable theme, such as one that builds a man's ego.
3. A well-designed package.
4. A well-defined distribution and an understanding of the functional requirements and potentialities of this distribution.
5. Consistent and distinctive advertising and promotion.
6. Research with the development of new products in mind.

SCC MEETS

(Continued from page 578)

and marketability problems have been real obstacles in the path of successful product development, according to this report. Dr. Migliarese discussed the justification for continued investigation in this area and presented specifications for the ideal product in this field.

Additional applications for certain broad spectrum antibiotics as biologically active ingredients of cosmetic preparations were envisaged in a paper by Vincent de Gennaro and R. E. Mackie of Chas. Pfizer & Company.

The properties of these essentially nonsystemic antibiotics and the rationale for their possible inclusion in cosmetic preparations were discussed. Neomycin was used to illustrate the development stages necessary in going from a pharmaceutical compound to a safe and effective deodorant product. In addition, the data collected to meet the requirements of the Food and Drug Administration were outlined.

"Should Bacteriostats be Added to Toilet Soaps?" was the subject presented by W. M. Linfield and

(Continued on page 674)

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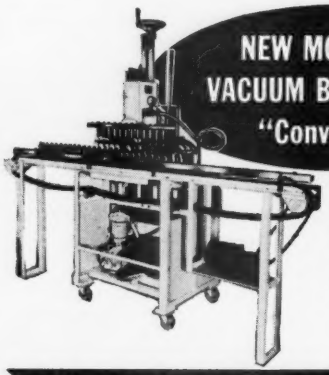

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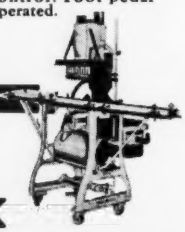

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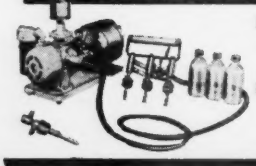

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TRADE LITERATURE

Teflon. Allegheny Plastics, Inc., Coraopolis, Penna.,—8-pg. illus. bulletin (R3017) shows Teflon products and processing operations.

Package Coding. Adolph Gottscho, Inc., Hillsdale 5, N. J.—file folder illustrates line of machines for coding, marking and imprinting. Includes selector chart.

Chemical Process Pumps. Goulds Pumps, Inc., 225 Black Brook Rd., Seneca Falls, N. Y.—bulletin (#725.1) describes new line of pumps.

Extrusion Laminations. Flexible Packaging Division of Continental Can Company, Mount Vernon, Ohio—6-pg. booklet describes advantages of molten polyethylene as a laminant.

Labler and Imprinter. Avery Label Company, 1616 S. California Ave., Monrovia, Calif.—booklet describes model 275E automatic labler and imprinter.

Pumps. Goulds Pumps, Inc., 225 Black Brook Rd., Seneca Falls, N. Y.—16-pg. booklet gives elementary outline of reciprocating, rotary and centrifugal pumps.

Material Level Control. Flo-Tronics, Inc., 712 W. Ontario Ave., Minneapolis 3, Minn.—bulletin describes Flo-Level Model L201.

Chemicals. Hooker Chemical Corporation, Niagara Falls, N. Y.—16-pg. bulletin lists and describes 108 organic and inorganic chemicals.

Heat Transfer Surfaces. Dean Products, Inc., 1042 Dean St., Brooklyn 38, N. Y.—25-pg. technical data bulletin (356) illustrates Panelcoil heat transfer surfaces.

Light Hydrocarbon Distillates. Sonneborn Chemical and Refining Corporation, White Oil Div., 300 Park Ave. S., New York City 10—Current Topics (#148) discusses Deobase, Minbase and Litebase.

Centrifugal Pumps. Goulds Pumps, Inc., 227 Black Brook Rd., Seneca Falls, N. Y.—bulletin (722.6) shows two new sizes of model 3305-06 2-stage centrifugal pump.

Nacreous Pigments. The Mearl Corporation, 41 E. 42nd St., New York City—Nacreous pigment handbook, describes Mearlmaid, Mearlite and others.

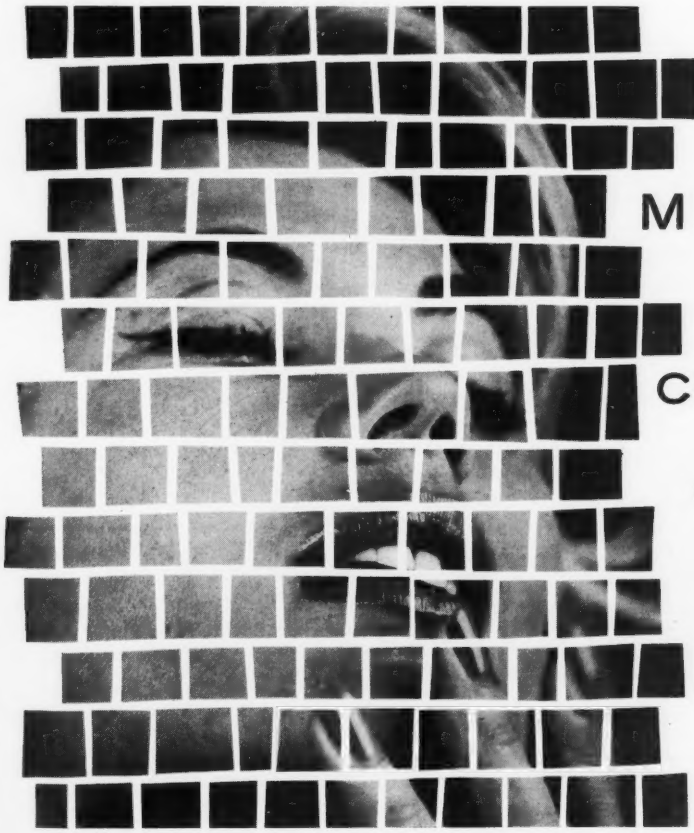
Self Cleaning Centrifuges. The De Laval Separator Company, Poughkeepsie, N. Y.—8-pg., 4-color catalog, contains illustrations and specifications for self cleaning centrifuges.

Chemical and Processing Equipment. The Falcon Manufacturing Division of the First Machinery Corp., 211 Tenth St., Brooklyn 15, N. Y.—handy reference for engineering constants with short cut tables of technical data.

Electric Flow Meters. Minneapolis-Honeywell Regulator Company, Industrial Division, Wayne and Windrim Avenues, Phila., Penna.—specification sheet (S200-3a) of electric flow meters with pneumatic control.

Hot Water Boiler. Orr & Sembower, Inc., Reading, Penna.—bulletin (1265) illustrates Powermaster hot water boiler for forced circulation systems.

Analytical Instruments. Philips Electronic Instruments, 750 S. Fulton Ave., Mount Vernon, N. Y.—28-pg. catalog with specifications and operating data on instruments for research and production control operations.



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Evaporators. Buflovak Equipment Division, Blaw-Knox, 1543 Fillmore Ave., Buffalo, N. Y.—catalog (393) illustrates evaporators, package systems and auxiliary equipment.

Petrolatum. Dept. of Industrial Research, Sonneborn Chemical and Refining Corporation, 300 Park Ave. S., New York City 10—4-pg. illus. historical review of the manufacture of petrolatum for use in drugs and cosmetics during the past 90 years. Bibliography included.

Anaerobe Growth. The Torsion Balance Company, Clifton, N. J.—bulletin on the Torbal B.T.L. Anaerobic Jar with all-metal construction and semi-solid indicator.

Spectroscopy. Technical Information Dept., Beckman Scientific and Process Instruments Division, Fullerton, Calif.—36-pg. bulletin (795) on ultraviolet, visible, and near-infrared spectroscopy.

Container Collapse Problems. Dept. 119, W. R. Grace & Co., Polymer Chemicals Division, 225 Allwood Rd., Clifton, N. J. —7-pg. brochure (TSB #109) discusses solution to dimpling problems with recommendations and schematic drawings.

Ethylene. Technical Literature Dept., U. S. Industrial Chemicals Co., 99 Park Ave., New York City 16—20-pg. booklet especially for developmental chemists and engineers using ethylene from cylinders. Bibliography.

Tetrahydrophthalic Anhydride. Dept. NA 103, National Aniline Division, 40 Rector Street, New York City 6—21-pg., revised technical bulletin giving physical and chemical properties, toxicity, handling precautions and uses.

Ball Valves. Worcester Valve Company, Inc., Worcester, Mass.—4-pg. brochure describes line of Econ-o-miser ball valves and pipe ends.

Scents. Aromatic Products, Inc., 235 Fourth Ave., New York City 3—2-pg. booklet lists laboratory scents.

Controlled Feeding. B-I-F Industries, Providence 1, R. I.—bulletin on feeding, weighing, blending and proportioning equipment for controlled feeding of liquids and solids in process industries.

Expansion Fitting. P. R. Dept., Cincinnati Sub-Zero Products, 3930 Reading Rd., Cincinnati 29, Ohio—12-pg. booklet on expansion fitting as an assembly procedure. Includes tables and photographs.

Company Brochure

International Flavors & Fragrances Inc., 521 West 57th Street, New York City 19—12-pg. booklet describes the company's chemical research; its raw materials, both natural and synthetic; its creation of flavors and fragrances; and its technical services, production and distribution.

Laboratory Apparatus

General Scientific Equipment Company, Limekiln Pike & Williams Avenue, Philadelphia 50, Penna.—40-pg. catalog (#GS-161) covers laboratory supplies, apparatus, protective garments, magnetic stirrers, liquid and compressed air pumps, plastic materials and medical ware. A thermoplastic properties chart outlining uses of polyethylene is included.

Seals and Fasteners. A.P.M. Corporation, 41 Honeck Street, Englewood, N. J.—16-pg., 2-color catalog provides complete information on the company's entire line of explosion and high-pressure seals for switches and shafts; high-pressure self-sealing fasteners; transparent and flexible switch seals; power connectors, and other products.

Fine Powder Feeder. Sylvester & Company, 17706 Miles Avenue, Cleveland 28, Ohio—6-pg. technical bulletin introduces the Syloc CCC Fine Powder Feeder, details construction features and operation, and lists typical powders handled by the unit.

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COMING EVENTS . . . .

NOVEMBER

12 Pharmaceutical Advertising Club, meeting, Roosevelt Hotel, N. Y. C. (P.A.C., 489 Fifth Ave., N. Y.)

13 Industrial Pharmacy Section A.PH.A., eastern regional meeting on pharmaceutical technology. Park Sheraton Hotel, N. Y. C. (A.P.A., I.P.S., 1500 Spring Garden St., Phila. 1, Pa.)

14 Synthetic Organic Chemical Manufacturers Assn., luncheon meeting, Hotel Roosevelt, N. Y. C. (See above.)

14 Society of Cosmetic Chemists, Chicago Chapter, Henrici's Restaurant, Merchandise Mart, Chicago, Ill. (See above.)

14 Society of Pharmacists in Industry, fall meeting, N. Y. Academy of Sciences Building, 2 East 63rd Street, N. Y. C. (Vincent De Feo, Dodge & Olcott, Inc., 180 Varick St., N. Y. C. 14)

14-19 National Wholesale Druggists' Assn., (Americana). Bal Harbour, Fla.

15 American Society of Perfumers, open meeting, Advertising Club, 35th St. & Park Ave., N. Y. C. (See above.)

16-19 American Dental Assn., annual session, Philadelphia, Pa.

16-20 Fifth International Automation Congress and Exposition, New York Trade Show Bldg., New York City.

18-20 Packaging Institute, annual national packaging forum, Biltmore Hotel, N. Y. C. (Chas. A. Leld, P.I., Inc., 342 Madison Ave., N. Y. C. 17)

18-26 Lady Fair Exposition, McCormick Place, Chicago, Ill.

21 Manufacturing Chemists' Assn., semiannual meeting, N. Y. C.

21 Conferences on the Uses of Radioisotopes in Animal Biology and the Medical Sciences, International Atomic Energy Agency, Food and Agriculture Organization and World Health Organization, Mexico D.F. to Dec. 1.

27 Exposition of Chemical Industries, N. Y. Coliseum, N. Y. C. to Dec. 1.

27-28 National Educational Conference, sponsored by the FDA and The Food Law Institute, Auditorium, U. S. Department of Health, Education and Welfare. (FLI, 205 East 42nd Street, N.Y.C. 17.)

28 Society of Cosmetic Chemists, annual meeting and dinner dance, Biltmore Hotel, N. Y. C. (S.C.C., 2 East 63rd Street, N. Y. 21)

29 Toilet Goods Assn., Scientific Section meeting, Waldorf-Astoria Hotel, N.Y.C. (T.G.A., 1270 Avenue of the Americas, N.Y.C. 20)

DECEMBER

1 Toilet Goods Assn., scientific section, winter meeting, Waldorf-Astoria Hotel, N. Y. C. (Kathryn Fitzpatrick, Americas Bldg., Rockefeller Center, N. Y. C. 20)

2 Society of Cosmetic Chemists, annual meeting, reception and dinner dance, Hotel Commodore, New York City (Walter Wynne, S.C.C., 2 E. 63rd St. N. Y. C. 21)

4-6 Robert A. Welch Foundation, conferences on chemical research, V-Molecular Structure and Biochemical Reactions, Rice Hotel, Houston, Texas.

4-6 Chemical Specialties Mfg. Assn., annual meeting, Roosevelt Hotel, N. Y. C. (C.S.M.A., 50 East 41st St., N. Y. C.)

5 Cosmetic Industry Buyers & Suppliers Assn., annual Christmas party, Waldorf-Astoria Hotel, N. Y. C. (Howard T. Kaneff, Ar-kay Printing Co., 200 Hudson St., N. Y. C.

7 **Synthetic Organic Chemical Manufacturers Assn.**, annual meeting and dinner, Hotel Roosevelt, N. Y. C. (S. Stewart Graff, Sec., S.O.C.M.A., 41 East 42nd St., N. Y. C. 17).

7-9 **Pharmaceutical Manufacturers Assn.**, mid-year and eastern regional meeting, Waldorf-Astoria Hotel, N. Y. C. (Dr. J. O'Neill Closs, P.M.A., 1411 K Street, N.W., Washington 5, D.C.)

7-10 **American Medical Assn.**, clinical meeting, Dallas Auditorium, Dallas, Texas

9 **The Proprietary Assn.**, Research and Scientific Development meeting, Hotel Roosevelt, New York City (Dr. Howard A. Prentice, 810 18th St., N.W., Washington 6, D.C.)

12 **Chicago Perfumery, Soap and Extract Assn., Inc.**, annual business meeting and luncheon, Sheraton Towers. (Edward F. Lasch, Tenn. Products and Chemical Corp., 200 S. Michigan Ave., Chicago 4, Ill.)

14 **Pharmaceutical Advertising Committee** meeting, Roosevelt Hotel, N. Y. C.

16 **Chicago Perfumery, Soap and Extract Assn., Inc.**, Christmas Ball, Conrad Hilton Hotel. (See above.)

20 **American Society of Perfumers**, closed meeting, Advertising Club, 35th St. & Park Ave., N. Y. C. (A.S.P., 630 Fifth Ave., N. Y. C. 20).

24 **Manufacturing Chemists' Assn.**, Statler Hilton Hotel, New York City (M. F. Crass, M.C.A., 1825 Connecticut Ave., N.W., Washington 9, D. C.)

JANUARY 1962

22-25 **Plant Engineering & Maintenance Show**, Convention Hall, Philadelphia, Penna.

MARCH 1962

20-29 **American Chemical Society**, annual spring meeting, Washington, D.C. (A.C.S., 1155 Sixteenth St. N.W., Washington 6, D.C.)

25-30 **American Pharmaceutical Association**, annual meeting, Convention Center, Las Vegas, Nevada.

APRIL 1962

9-12 **National Packaging Exposition**, N. Y. Coliseum. (Packaging Exposition, c/o Clapp & Poliak Inc., 341 Madison Ave., N. Y. C. 17.)

30 **National Symposium on Instrumental Methods of Analysis**, Daniel Boone Hotel, Charleston, W. Va., to May 2.

MAY 1962

9 **Toilet Goods Assn.**, Scientific Section meeting, Waldorf-Astoria Hotel, N.Y.C. (T.G.A., 1270 Avenue of the Americas, N.Y.C. 20)

14-16 **Chemical Specialties Manufacturers Assn.**, annual mid-year meeting, Drake Hotel, Chicago, Ill. (C.S.M.A., 50 East 41st St., N.Y.C. 17)

17-20 **The Proprietary Association** annual meeting, The Greenbrier, White Sulpher Springs, W. Va. (P.A., 810 18th St., N. W., Wash., D. C.)

JUNE 1962

10-13 **National Industrial Pharmaceutical Research Conference**, King's Gateway, Land O'Lakes, Wisc.

11-14 **Societe Chimique de Belgique, International Symposium of Organic Chemistry** on natural products excluding steroids and polypeptides; under the auspices of the International Union of Pure and Applied Chemistry. (Florent Martin, 68, rue Berkendael, Brussels 6, Belgium.)

24-29 **Toilet Goods Assn., Inc.**, and the **Toilet Goods Manufacturers' Assn. of Canada**, joint convention, Chateau Frontenac, Quebec, Canada (T.G.A.—see above.)

27-29 3rd Joint Automatic Control Conference—Sponsors: ISA, AICLE, AIEE, ASME, IRE. (Dr. A. S. Robinson, Kollsman Instrument Corp., 80-08 45th Ave., Elmhurst 73, N. Y.) ●

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LEDERLE'S AEROSOL LINE

(Continued from page 595)

and Neo-Aristoderm Foam. These products are pressure loaded with fluorocarbon propellant. This crimping and loading was also done with the laboratory crimper and more "home made" loading equipment. At this point, with the slow production rates, the development laboratory was continually asking for the return of their crimper, so that they could proceed with their development work.

This latter fact gave production department the final push to obtain equipment. They either had to get, at least, a crimper, or have some of the new work done by a contract packager. Total quantities of aerosol packages produced and planned both at Lederle and by contract packagers were in the range of one million units per year. Figures for the years 1960 and 1961 are approximately:

Year	Produced at Lederle	at Contract Packager
1960—actual	625,000	460,000
1961—actual & planned	575,000	335,000

This includes two-, three-, six-, and 16-ounce cans, and 7.5cc and 15 cc glass containers.

Again the available low-speed-rated complete aerosol lines were discussed with several of the equipment manufacturers, and the expenditures could not be justified. The answer appeared to be the obtaining of a laboratory crimper and continued use of the "home made" loading equipment. Before obtaining management budget approval to purchase the crimper, we made one more round of equipment searching and came up with what we are now using—a unit developed, with some of our suggestions, by J-G Machine Works that both automatically crimps glass containers and cans, and loads both fluorocarbon and gas propellants with a tank water testing bath.

The unit has brought very happy results. Lederle, like most other plants, was not able to just plug the machine in and start up, without encountering problems. Most of the equipment that the manufacturer had made had been for cans or larger bottles. It had also been mainly semi-automatic units (small produc-

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tion or laboratory use) or complete automatic aerosol lines. At Lederle's request a conveyor system was designed to be used with the table (semi-automatic) model. The conveyor had to handle 15cc bottles up through 16 oz. cans. After the purchase order had been placed, even smaller 7.5cc bottles were added to the line. This increased the small size and small propellant problems. The table and conveyor were laid out to have some space available for later additions (product filler, propellant tester, and the like) if and when they might be wanted. The conveyor was designed with lugs to carry cans and hold attached pucks for small bottles.

After a few delays in completing the changes and additions, a check-out was made at the manufacturer's shop. (The company tries to check out all new packaging equipment at the manufacturer's plant before it is shipped.) Everything went well except the control of very small propellant fills for our 7.5cc and 15cc bottles (between 1¼ grams and 3½ grams of propellant). Lederle and the manufacturer then spent several weeks working with various pumps, accumulating reservoirs, and loading (filling) heads. When it appeared that the problem was basically solved, the machine was shipped.

The machine was immediately put into preproduction trials at Lederle. Two problems continued to exist—crimping of glass and greater variation of propellant fill than desired. After much testing and trials, and with the cooperation of the machine manufacturer, Jules Lagsdin redesigned the filling head and the company now controls propellant fills to plus or minus 0.05 grams (controls are set at ±0.10 grams).

In the case of crimping the glass, the problem took longer to solve and centered in two areas: the collet and the glass. The mechanical part was solved by a slight redesigning of the collet. The present collet has been used for over 300,000 crimps. The problem of the glass—7.5cc bottle—was slower in solving. The production department indicated to all concerned that the neck finish of the glass was not the same for both bottles (there was no breakage with the 15cc bottle). The glass supplier's experts told how perfect the glass was; Lederle complained. After a year the supplier agreed that the two were not the same. They are now supplying "good" glass and there is no breakage problem.

The entire line, which is mainly portable and moved in and out as required, now consists of an air cleaner, Elgin Twin Filler for product, the J-G Aerosol unit, and a New Jersey Pony Labeler. The J-G Unit is a self-contained portable, six feet, six inches x 24 inches, with an electrically driven link chain conveyor with lugs and attachable adaptable pucks, crimping heads for either cans or glass, a propellant filler and fluorocarbon propellant accumulating pump and reservoir and measuring piston pump that has micrometer adjustment. All of these latter items are operated by air. In addition there is an electrically

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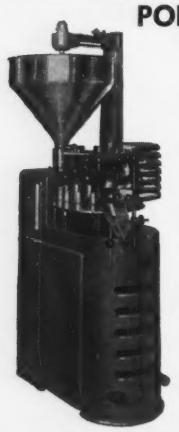

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heated water test tank.

With solutions to the problems worked out, the company is now operating at speeds that are far beyond their original expectations. On small bottles they run the line at 40 per minute and produce 13,500 to 15,000 packages per shift. On 16 ounce cans they operate at 30 per minute—slower, due to time required to balance gas pressure—and produce approximately 10,000 units per shift.

They have done test loading of relatively large volumes of fluorocarbon propellant—75cc to 150cc—via pressure loading with suitable valves. The tests results were very satisfactory. However, due to manufacturing equipment they are continuing to have the particular product contract packaged.

Lederle is pleased with their small aerosol installation and believe it fits their needs and is profitable. It allows maintenancy of a low inventory policy, production under a rigid quality control, protection of some bulk products, and allows the development laboratory to see what can be done in production and work toward that end.

SCC MEETS

(*Continued from page 665*)

R. E. Casely, both of Armour & Company's Grocery Products Division.

Incorporation of an additive in any personal product including toilet soap is justified only if it meets certain technological, moral and ethical requirements, Dr. Linfield stated. The additive must: (1) Benefit the user; (2) be effective at the level at which it is present in the final product (otherwise it will only undermine the public's faith in all additives); (3) have believability as far as the consumer is concerned; (4) be safe to humans at the normal and prescribed conditions of use; and (5) possess no adverse side effects in areas other than human safety (staining of skin or clothes, toxicity to pets, and so on.

Bacteriostats in toilet soaps are effective as body deodorants, as degerming agents, and lastly as an important factor in public hygiene. Effectiveness needs to be ascertained by *in vitro* as well as *in vivo* methods.

Among the various *in vivo* tests for the evaluation of degerming properties Dr. Linfield described newly developed bathing tests, said to yield more realistic results than the modified Price-Cade handwashing technique.

"An affective antibacterial agent in toilet soap should, by necessity, be active against a wide variety of organisms," Dr. Linfield pointed out. He compared typical antibacterial spectra in soap of hexachlorophene, trichlorocarbanilide, and a synergistic mixture of the two materials (AT-7), which is the active ingredient in Armour's "Dial" soap.

Safety, tests carried out on various species of animals and humans and the control of anti-bacterial soaps by the FDA were discussed. There are some

negative aspects to bacteriostats in soaps, particularly the possibility of resistant strains of certain organisms Dr. Linfield pointed out.

Possible future trends in terms of more active bacteriostatic agents, increased preferential absorption on the skin, and a better understanding of the mechanism of anti-bacterial action and toxic reaction were discussed.

Thomas Furia of Geigy Industrial Chemicals spoke on "Skin Bacteriostat Relations." Concentration of various bacteriostats (hexachlorophene, trichlorocarbanilide, tetrachlorosalicylanilide and trifluoromethyl dichlorocarbanilide) on intact human skin following application from surfactant solutions was determined. Test procedures were described in detail. The hand was used as test area.

Effects of *p*H, bacteriostat level, surfactant type, contact time were noted. Nonuniform adsorption of bacteriostats on the skin was described as well as desorption characteristics. These data were related to some inadequacies in currently used patch test techniques.

"Mechanisms of Action of Antibacterial Substances" were classified by Eugene D. Weinberg of Indiana University.

Despite the great general similarity in both the structural components and metabolic pathways of all living cells, it is becoming increasingly apparent that sufficient specific differences occur to account for the existence of selectively toxic agents, Mr. Weinberg pointed out. Some of the differences consist of slight variations in the composition of permeability barriers; many of the differences are concerned with pathways of synthetic processes; only a few are associated with energy yielding reactions.

Five groups of compounds that are antibacterial in low concentration but which vary in their toxicity for man were discussed. The groups consist of compounds that (1) denature proteins, (2) disrupt lipoprotein membranes, (3) suppress protein synthesis, (4) suppress mucopeptide synthesis, and (5) compete with known essential metabolites. The speaker covered chemical mechanisms of antimicrobial action, hypotheses to explain differential antimicrobial spectra, development of and mechanisms of resistance, and side effects on the host.

Summarizing the seminar and winding up the technical program, Emil G. Klarmann of Lehn & Fink Products Corporation, presented a paper entitled "The Open Problem of Biological Activity in Cosmetics." According to Dr. Klarmann, the pragmatic criterion of a "biologically active cosmetic" should be the evidence of a topical, non-traumatic, pharmacodynamic action, either accompanied or followed by a cosmetically desirable effect, but free from any undesirable systemic involvement. Within this circumscription, the speaker reviewed what to him appear as open problems in the areas of deodorants, vitamin cosmetics, hormone and other steroid preparations, suntan cosmetics and anti-bacterial soaps. ●

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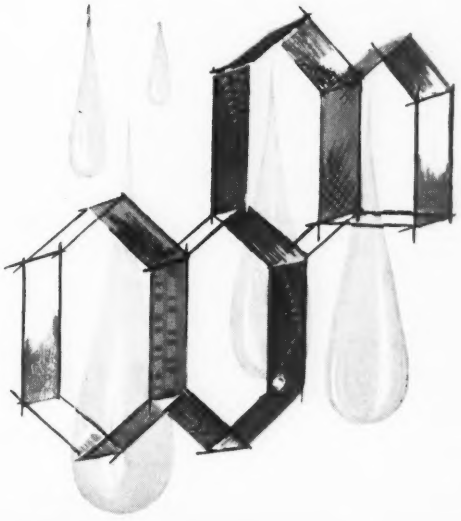

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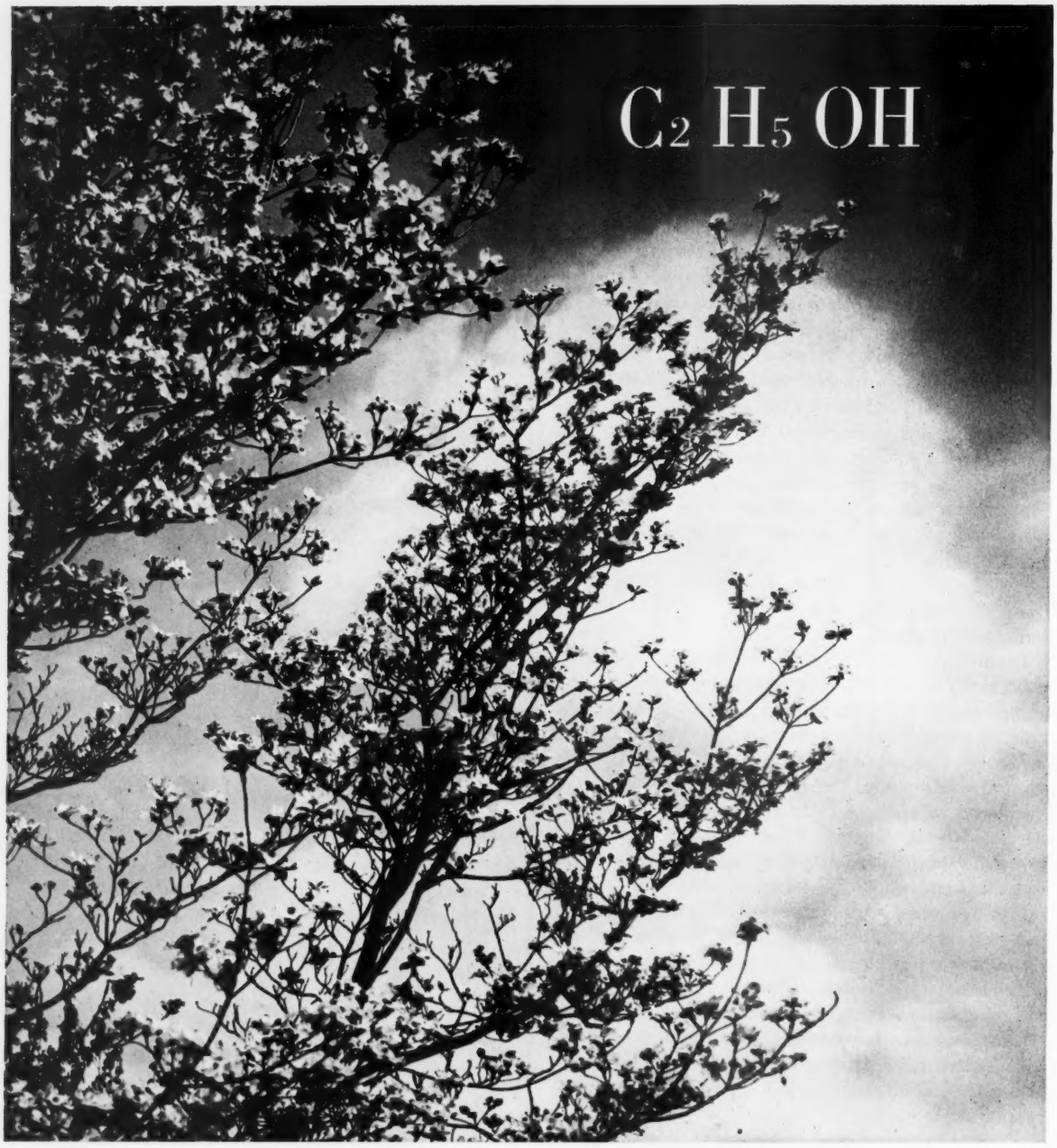

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Skin Research

NAIL (*Continued from the October issue*). *It is very rare in whites*, but may be found in Addison's disease, diabetes mellitus, gravidity, or menopause. *Shiratori et al.* found pigmented stripes present in 1.3 per cent of males and 2.2 per cent of females among 1826 Japanese. Incidence decreases in frequency from thumb to small finger and usually is not inherited.

DERMO-EPIDERMAL JUNCTION

Cooper using an alcian blue-orcein technique on human skin after pretreatment with hyaluronidase and Mallory bleach was able to demonstrate a blue staining basement membrane which coats the pedicles of the basal cells. Fine elastic fibers, which extend toward each pedicle, but fade out before reaching it, are coated with alcian blue reactive material, which joins the basement membrane. This system of elastic fibers plus membrane is distinct from the reticulin layer which consists of a plastic mixture of amorphous substance and disaggregated collagen.

CORIUM, FIBERS

Puchtler, Isher were able to demonstrate that phosphomolybdic acid is bound in tissue sections in exactly those locations that are stained selectively by the various trichrome stains for collagen. The reagent probably forms a bridge between substrate and dye. *Kruszynski* made use of media of varying refractive index to demonstrate details of connective tissue fibers by phase contrast microscopy. *Jarrett* found that unfixed skin fluorochromed with acridin orange and mounted in water exhibits elastic fibers only, no collagen bundles. He convinced himself by various experiments that collagen exists as a gel during life and is precipitated as bundles during fixation.

Kuhnke after studying variously treated collagen fibrils with the electron microscope concludes that they have a differentiated outer sheath, which contains a mucopolysaccharide cementing substance and is mainly responsible for the periodic cross-striation. The interior of the fibrils consists of a meshwork of filaments embedded in amorphous substance. *Keech* re-examined 8 samples of collagenase resistant dermis and substantiates former conclusions that collagen can be transformed into elastin-like structures by chemical treatment.

Labella tentatively identifies Schiff positive substances in elastic fibers as cerebrosides and non-extractable plasmalogen-like compounds. *Loomeijer* obtained a clear yellow solution with yellowish white fluorescence on partial hydrolysis of ligamentum nuchae. The pigment probably is related to pyrimidines and purines.

Fullmer, Lillie describe a new connective tissue fiber, which is demonstrable with orcein, resorcin-fuchsin, and aldehyde-fuchsin only after treatment with peracetic acid. It is found in areas of mechanical stress, for instance in the periodontal membrane, in the skin around the adnexa. Because it is resistant to acid hydrolysis, the authors propose the name "oxytalan fiber." *Gross, Dumsha* define elastoidin, a large translucent fiber in the fins of selachians, as a two-component member of the collagen class.

CORIUM, CELLS

Popoff, Popoff found hematopoiesis in the skin of human fetuses 8-50 cm long. Foci in the dermal mesenchyme show erythropoietic activity first. Other corpuscular elements of the blood appear from the fifth month on. This fetal capacity is important for the explanation of hematopoietic dermopathies later in life.

Steigleder found strong esterase activity in normal fibroblasts, histiocytes and mast cells, and also in pathologic infiltrates. According to *Higginbotham* local fibroblasts exhibit metachromatic granules after injection of heparin and other acid mucopolysaccharides into the tissue. Foreign materials such as cellulose sulfate may be stored for a long time. the author coins the word micellophagosis for this phenomenon and concludes that acid mucopolysaccharides are synthetized by fibroblasts, secreted into the ground substance, and possibly later re-ingested and digested. These substances also may act as detoxifying agents for basic amines (histamin). Mast cells containing both heparin and histamin may play a part in this cycle.

Padawer reviews his own and others' studies on mammalian mast cells. *Takeda* compared various fixatives for mast cells of the mouse and found israbin and acrinol solutions most satisfactory. *Shubich* recommends acidified alcoholic Bismarck brown (vesuvin) as a selective mast cell stain. *Petterson* points out that 4.8 per cent toluidin blue is isotonic with physiologic salt solutions

and may be diluted with isotonic solutions to any desired degree for vital staining of mast cells. *Arvy, Rancurel* compared mast cells of frog, crocodile, rat, and dog. Those of crocodiles resemble mammalian cells in staining reaction, but are as easily damaged by formalin fixation as those of frogs. Toluidine blue generally is superior to alcian blue, PAS, or the Hale reagent. The fact that in combinations of the latter stains some granules stain blue, others red is interpreted as showing stages of maturation. *Takeda* finds that mast cells near blood vessels contain orthochromatic, PAS positive granules, while those in the interstices are metachromatic and PAS negative. He concludes that the former contain immature monosulfated compounds, the latter di- and trisulfated heparin. *Quevedo et al.* discounts previous reports of relations between mast cells and melanocytes. Complete destruction of the former by water injected into mice does not affect hair growth or pigmentation.

Burch, Phillips confirm findings of *Adams-Ray, Nordenstam* that human skin contains chromaffine cells.

NERVES

Smith reproduces diagrams of the sensory innervation of the face. *Rohr* investigated the segmental innervation of neck, shoulder, and arm in 21 cases of blunt trauma which had lead to intradural exeresis of nerve roots. The thorax does not receive fibers from C 5 to Th 1, the arm may receive fibers from C 4 to Th 1 (prefixation) or C 5 to Th 1 or Th 2 (postfixation).

Van Campenhout reports reliable staining results on Bouin fixed paraffin sections if sodium bicarbonate is used in preparation of the ammoniacal silver solution. *Miller et al.* studied the pattern of cutaneous innervation of the human hand by perfusing amputated limbs with methylene blue, then cutting free-hand razor sections, which were fixed in molybdate after short exposure to air. These thick sections give a complete three-dimensional impression of the innervation. Non-hairy skin contains free and encapsulated nerve endings. Naked fibers end among the connective tissue cells or enter the epidermis through the cupola of a papilla and extend up to the stratum granulosum. All dermal papilla have free endings, which do not form anastomoses, about half also contain Meissner's corpuscles. A third type of ending is found apposed to the under surface of the epidermis in the region of the intermediate ridges and their lateral epidermal septa. There are groups of expanded disc-like endings (Merkel's discs) arising from many branched fibers. As many as 25 to 75 expansions form a group which may encompass an area of 25,000 μ^2. The subpapillary dermis contains free endings, encapsulated ovoid endings (Krause end bulbs), and non-encapsulated, but confined and highly branched structures with some terminal endings bearing small expansions (Ruffini endings). Deeper down there are Pacini corpuscles. Hairy skin has free endings in epidermis and corium, and endings associated with hair follicles. *Scott* confirms the absence of specialized end organs in hairy skin. Specific cholinesterase is present not only in autonomic nerves around sweat glands, but also in sensory nerves where it seems concerned with the passage of antidromic impulses. There are no nerve endings in the arteriolar walls, but sensory terminals are found in close proximity.

Cauna, Cauna, Mannan present a detailed analysis of the structure of Meissner and Pacini corpuscles in human skin from birth to old age. Meissner corpuscles are entirely cellular with the exception of their elastic coat. The distal portion is made up of flattened receptor cells interleaved with nerve endings which wind around their borders to reach the next level. The deep extremity of the corpuscle consists of irregular cells resembling Schwann cells which support nerve fibers. Pacini corpuscles continue changing throughout life by apposition of new lamellae from adventitial tissue and retrograde growth of inner bulb and lamellae along the central nerve. A fetus of 204 mm. CR length had 62 corpuscles in the distal phalanx, 55 in the middle, 61 in the proximal phalanx of a finger. No Pacini corpuscles are present in corium or subcutaneous tissue of the dorsal part of digits. *Gay Prieto, Rodriguez Perez* examined tactile endings by PAS staining. They describe fine membranes, not visible with other stains, in the Meissner corpuscle. These envelop the teloglia cells. Pacini corpuscles have strongly PAS positive capsules. The authors saw minute blood vessels between the membranes of this type of ending. *Hurley, Smart* report the finding of non-specific cholinesterase in the specialized nerve endings of human genital skin. This reactivity thus identifies all three types of special endings found in human skin. *Duthrie, Gairns* give a description of the sensory nerve endings of the anal region of man as seen with the Gross-Bielschowsky method. Hairy skin and rectal mucosa have free endings only, while the anal canal and skin close to it have organized endings.

Charles describes details of myelin figures seen in electron micrographs of peripheral nerves. Lamination, resembling that of mast cell granules, probably is due to physico-chemical behavior of the lipids.

A large number of very interesting papers was presented in Vienna at a symposium on the neurovegatative system of the skin. Papers published in other journals include a report by *Glasser* on electron optical studies. He points out that each medullated fiber in the skin has a Schwann sheath of its own. The sheaths of non-medullated fibers are a syncytial system of tubes which divide and re-unite. Nerve fibers wave their way through the branches. Several fibers share one sheath, each attached to the Schwann cell surface by a "mesaxon" that actually is an infolding of the cell membrane. Thus the fibers actually lie outside the cell membrane, though surrounded by it. *Sampaolo, Loffredo Sampaolo* compared the results of Champy-Coujard's osmium method with Ruffini's gold method in the external genitalia of female guinea pig fetuses. There is an uninterrupted net of adrenergic fibers, coming from the deep dermis, anastomosing around the adnexa, and extending into the epidermis. *Knoche* examined vegetative formations by means of Ehrlich's hematoxylin according to Feyrter. The plasmatic cords of the autonomous nervous system show even fine granulation in unfixed tissue; large granules and vacuoles as described by *Jabonero* appear only after fixation and can not be interpreted as evidence of neurovegetative secretion. •

Industry's Books . . .

Some Recent Developments In The Chemistry Of Phosphate Esters of Biological Interest, *by H. Gobin Khorana, University of Wisconsin, 141 pp., John Wiley & Sons, Inc., New York, (1961), cloth,* **$5.25.**

In recent years, dramatic advances have been made in the field of intermediary metabolism and, in particular, pathways of biosynthesis. These advances have been dependent upon the recognition of the existence of a variety of phosphate esters which serve as coenzymes and activated group donors. On the chemical side, intensive research has led to the development of the methods of phosphorylation, of coenzyme synthesis, and of polynucleotide synthesis. Furthermore, deeper understanding of the behavior of phosphate esters has led to the solution of structural problems of many biologically important classes of phosphate esters—for example, the nucleic acids and phospholipids. This book reviews for the first time many of the developments in the above mentioned fields, with special emphasis on the recent synthetic work. It is based on a series of lectures given at the Rockefeller Institute in the spring of 1959.

Invitation To Chemical Research, *by E. Emmet Reid, Ph.D., LL.D., Professor of Chemistry, Emeritus, John Hopkins University, 365 pp., Franklin Publishing Co., Inc., Palisade, N. J., (1961), cloth,* **$10.60.**

This is a how-to-do-it book. It will enable beginners and students to carry out research in any branch of chemistry. Every step is described in detail. It tells where to look for and how to find problems and ideas; how to carry out literature and patent searches to avoid duplication of effort; what usual and unusual approaches you can use to solve the problem or turn the idea into fruitful reality. It explains how you can identify your product and how to improve processes and products. The book outlines the differences between laboratory methods, the semiworks, and plant-scale operations. The importance of reducing the cost and increasing the yield is shown and many timesaving suggestions are included.

Rogers' Inorganic Pharmaceutical Chemistry, *by Taito O. Soine, Ph.D., Professor of Pharmaceutical Chemistry, University of Minnesota, and Charles O. Wilson, Ph.D., Dean of the School of Pharmacy and Professor of Pharmaceutical Chemistry, Oregon State University, Seventh Ed., Illus., 704 pp., Lea & Febiger, Phila., (1961), cloth,* **$10.**

The many inorganic chemicals used today in medicine and pharmacy are taken up extensively in this book. The text readily adopts itself to any method of teaching in its discussions of the history, occurrences, properties, tests for identity and purity, and commercial manufacturing and pharmacologic action of the element under consideration.

Molecular Sieves, *by Charles K. Hersh, Illinois Institute of Technology, 129 pp., Reinhold Publishing Corp., New York, (1961), cloth,* **$6.50.**

The use of the crystalline aluminosilicates, or molecular sieves, has greatly increased during the past several years. Here is the first book to review all the known information on the use of natural and synthetic crystalline zeolites in separating both gaseous and liquid components by molecular sieve action. The material presented involves only those sieves that are important in such separations.

Adhesion to Board Manual, *41 pp., Packaging Institute, 342 Madison Ave., New York, (1961)* **$5.**

This is intended for use as a standard reference for anyone concerned with the side seaming and closure gluing of folding cartons. In addition to the text, organized in accessible sections and parts, there is a chart of the properties of various adhesives in general use.

The Etiology, Pathogenesis And Early Diagnosis Of Cancer And Precancerous Diseases Of The Stomach, *441 pp., now available in English through the Office Of Technical Services. (Order 60-51067 from OTS, U. S. Department of Commerce, Washington 25, D. C.,* **$3.50.**

Disorders of the biochemical processes in the gastric mucosa are the first manifestations of "the transition from noncancer states to precancer and then to cancer of the stomach," according to clinical data compiled by K. A. Skulme, a Soviet scientist.

Pharmacognosy, *by Edward P. Claus, Ph.D., Dean and Professor of Pharmacognosy, Ferris Institute School of Pharmacy, 565 pp., Illus., Fourth Ed., Lea & Febiger, Phila., (1961), cloth,* **$12.50.**

This is an up-to-date, all inclusive study of the chemical aspects of drugs, therapeutic agents and commercial products derived from the plant and animal kingdoms. The natural derivatives of biological origin are emphasized, as is the determination of their identity and value. Synthetic replacements on the commercial market are discussed fully. Rigidly adhering to the monograph form, this book which represents, in one volume, the chemical constituents, botanical characteristics and mode of action of drugs.

Management Games (A New Technique for Executive Development), *by Joel M. Kibbee, Clifford J. Craft, Burton Nanus, 343 pp., Reinhold Publishing Corp., New York, (1961), cloth,* **$10.**

Management games have generated considerable interest among educators, training directors, operations research scientists, and business executives. Although relatively new, games are now an accepted educational technique. They are being widely played and discussed, and numerous articles and specialized books have been written about them. This book provides a general introduction to the subject, and attempts to answer such questions as why and how to use them, and how to design them. It includes six detailed case histories, in addition to a marketing game, an extensive list of existing games, and a bibliography.

The Metabolism Of Iodine And The Thyroid Hormones, *197 pp.,* **$2.**

Published in the USSR in 1959, this work was translated for the National Science Foundation and the Department of Health, Education and Welfare. The translation is available from the Office of Technical Services. (Order 60-21167 from OTS, U. S. Department of Commerce, Washington 25, D. C.)

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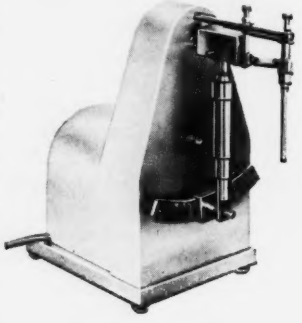

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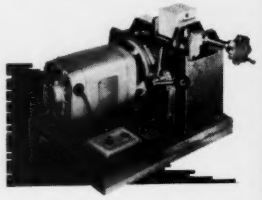

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Frazer V. Sinclair, Editor.

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My commission expires March 30, 1963.